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JUNE 1997 Vol.3 No.6

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Conclusions

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After Comments

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Kudos and Criticisms

Kasparov Versus Deep Blue

The chess world took something of a blow last month when world champion Garry Kasparov was defeated in a six-game high-publicity match against IBM's male-and-joy Deep Blue, a RS/6000 SP-based computer system. Until now a chess Grandmaster could always triumph over a man-made computer — due to the strategic, intuitive demands of the game.

Deep Blue boasts massive programming power, capable of calculating 200 million positions per second applied against an extensive database of chess moves and strategies.

"Man enjoys competition with his tools, and there's no more exciting tool than the computer," said Murray Newborn, a professor at McGill University, and chairman of the ACM Computer Chess Committee. In fact, Newborn said he remembers the days when people would watch races between horses and cars. And while some people were no doubt saddened when the fastest horse could no longer keep up with the newfangled automobile, it was not such a tragic event as to cause humanity to pass on the theme for faster, more meaningful travel opportunities.

Deep Blue is an example of significant research that will be applied to other calculation-intensive applications such as drug research, to allow rapid calculation of various reactions and scenarios, before even initial drug testing begins, explained Murray Campbell, a research scientist at the IBM TJ. Watson Research Center (and a University of Alberta graduate).

Innovation rushes around. This issue, be sure to check out some of the current technologies highlighted in *Canadian Computer Wholesaler*, such as "The Graphics Game — How To Play *Blue 96*," page 25; and our special Lab Tour report on powerful desktop replacement notebooks, starting on page 32.

Looking to the future, fascinating research is going on at IBM called the Human Modern, or the Personal Area Network — the PAN. At a recent demonstration, one person stepped onto a small

device. A second person stood on another device. They joined hands and immediately a message flashed on the screen, as the data was carried through their bodies, by a minute electrical current (our nanoswing).

According to IBM spokesperson David Yuen, the research they someday hope to adapt towards allowing a consumer to authorize a transaction by touch (assuming their credit card or device was on their body) or to transfer other pertinent information via touch. (Potent records could be immediately accessed by medical professionals, by touching that person.) Yuen also suggested that perhaps instead of complicated security systems and power, security-conscious buildings could recognize employees and unlock the appropriate doors as they walked through the building and touched the handles.

Not All Innovative

Comdex/Canada's new age revolution can hardly be called forward thinking, as now students of less than 21 years will no longer be allowed on the trade-show floor, as the stated goal to raise the "quality of attendees." (Please see "Comdex/Canada gives the lie" page 14.)

And this lies at industry which saw Bill Gates start up that heavyweight Microsoft Corp. at the tender age of 19. And with the prevalence of Web development, increasing numbers of keen young people have been playing significant technology roles for corporations.

Do you have at least one sub-21-year-old working on your premises? How do you feel about the fact that those members of your staff wouldn't be welcome on Comdex's show floor?

This is short sighted. Many of the young people who are being snubbed and perhaps humiliated by this exclusion will in a short year or two hold impossible positions in this industry, make significant product purchases, further accept-ance of technological innovations, and even book floor space at computer trade-shows. Who will have the last laugh? — BR

Grace Covaleska
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E-mail in your ear

It was bound to happen. In a world where you can receive your E-mail on your computer, on your fax and even read over the phone by a machine, it is now possible to receive your E-mail on your cell phone screen.

Recently, CanTel AT&T introduced its Digital Personal Communications Services or PCS.

Digital PCS is simply the marriage of a cell phone and an alphanumeric pager — plus a whole lot more. The feature which impressed me the most about PCS phones was the E-mail. As anyone who keeps up with these gadgets can tell you, E-mail-to-pagers isn't new technology. Real Estate professionals have already discovered the value of receiving timely requests while never having to touch a computer. PCS phones combine this advantage while at the same time continue to prevent the disadvantage of limited message space. Messages must be kept within 150 characters. That's characters not words. This equals about two to three sentences. If the message reads, "Urgent! Call back Bill Smith 555-1234. Wants to make big purchase!" that's no problem. If the message reads, "Hi John! How are the sales calls going today? The bad it's raining. Guess what? You will never guess who just called the office! It was that guy who" you are left helpless as the little green screen modes you.

To receive E-mail on a PCS phone, the sender simply sends a message to the cell

number plus the domain@pcs.canetel.com, for example, 6046311400@pcs.canetel.com. A second method is to visit the CanTel AT&T Web site at <http://www.canetel.com>. The advantage to this method is that it will keep the 150-character limit in check (unlike your E-mail software). The final method, which is also new and interesting, is you can now send a message from the modem in your computer without an Internet account. CanTel AT&T has made software available where a computer can connect locally (in major areas such as Vancouver) to send the message to a PCS phone.

The cost for all this new technology? Less than you would think but not cheap. First of all, you will need to throw out that old analog cell and purchase a spanking new Digital Nokia 2160 or Ericsson D1100 with the larger screen.

The real kicker is the number of messages you can receive. Only 180 E-mail, numeric OR voice messages! Well that should last us about three days! Further, E-mail/messages are charged at \$10 each. Forget about forwarding, routing, list messages or any other usual message. The system should probably be left as a "page-me" E-mail address only.

CanTel AT&T is now running a TV spot promoting this service with a young guy telling people at a party he just got E-mail on his cell. He doesn't seem to care what it says, he just thinks it's cool. Well, maybe that's the whole point here. ☹

Robert Samalove
Business
Internet Instructor and consultant
grake@grake.net

CCW Bulletin Board**System upgrader seeks software supplier**

I have been upgrading computers for two years now and would like to add software sales to my business. I am having trouble finding wholesale software suppliers. I have searched on the Web, but get specialized software suppliers. I need an up-to-date variety like Education, Q&A, Games, etc.

Can you point me in the right direction? Preferably (that would be) a Canadian wholesaler software supplier from which you don't have to order in bulk, as I am home-based and don't have a lot of storage space. I order as the customer needs it.

Wanda Torrey
Fax: (216) 338-7266

Editor's Note: You can find a number of potential partners via our on-line sourcing directory, at <http://www.ccw.com>. And please keep an eye on that resource, as we'll be working to further improve its value to our readers over the coming months.

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We welcome your letters on industry trends and concerns as well as your comments on our magazine. We reserve the right to edit your contributions for length and clarity. Please write to The Editor, via E-mail at ccw@ccw.ca, or fax: (416) 868-2656.

Correction:

In our April issue, CCW listed Larkin America as the sole agent for sub-assemblies of distributor Globefix. In fact Globefix addresses that market through a partnership with NetSol International Inc.

Contact: The Editor**LETTERS**

Canadian Computer Marketplace welcomes your opinions on our firm issues in the market, plus your feedback on our publication.

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WHAT DO YOU THINK?

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INDUSTRY FLASH!

Gateway 2000 said 'no' to Compaq merger

(NB) — Gateway 2000 just said no to a merger with Compaq Computer, according to a report in the May 19 issue of *Time Magazine*. The issue claims the two companies almost completed a US\$7 billion merger, but Gateway founder Ted Wahl pulled out of the deal as the last minute.

The *Time Magazine* report notes that Wahl halted the negotiations "probably hours before it was to be announced." Quoting an unnamed source, Wahl reportedly canceled the merger because Compaq executives would be subordinate to Compaq even after the merger.

Although rumors of the proposed merger have been circulating through the computer industry, Compaq's chief financial officer, Earl Mison, declined comment on the merger. Micron Electronics Inc. announced last month that it was in talks with Compaq to sell its personal computer business.

Neither Compaq nor Gateway 2000 were available for comment.

IBM debuts Bluebird technology

(NB) — IBM Corp. gave the first press demonstration of a new technology code-named Bluebird, which is aimed at simplifying OS/2 management while enabling the built-in Java, integrated World Wide Web browser, and RunTime IPL (initial program load) technology features of OS/2 across additional environments.

John Soyars, vice-president of IBM's Personal Software Products Business, said IBM will step away from its previous approach of trying to make OS/2 a better Windows than Windows "with Bluebird. Instead, the company will use OS/2 and Java to deliver integrated services and server-based applications to multi-plex client environments."

Soyars said desktop environments supported by Bluebird will include OS/2 Warp, Windows, DOS, network computers (NCs) with and without hard disk drives, and Web browsers.

IBM plans to launch the new environment in beta this summer, and that a commercial release date will be announced after IBM has started to work with customers.

Intel debuts Pentium II

(NB) — With the New York debut of Pentium II, Intel Corp. introduced a radically new microprocessor design. Priced from US\$436 to almost US\$1,000 each, Pentium II systems in early use will be confined to business and scientific uses requiring powerful computer resources.

Today, Intel announced Pentium II microprocessors operating at 233MHz, 266MHz and 300MHz. Listed at US\$636 and US\$773 per thousand, respectively, the 233MHz and 266MHz versions are currently available. According to Intel, a 300MHz Pentium II priced at US\$1,198 will ship sometime during the third calendar quarter.

Intel has left behind the standard criterion, square microprocessor with metal pins for insertion into a socket on a motherboard. Pentium II is a rectangular metal and plastic-encased cartridge which plugs into a socket, smaller but similar to an expansion slot for add-on cards. Called Single Edge Contact (SEC), the new technology contributes to the speed of data processing.

Pentium II now leads Intel's family of Pentium microprocessors. For the time being, the company will continue manufacturing standard Pentiums. Pentiums with MMX technology and Pentium Pro microprocessors. Company officials, however, have said there will be no further improvements to these three microprocessors. Moving into 1996 and 1997, Intel plans to manufacture the new Pentium II related volumes as it becomes the power inside most home desktop to top business and scientific computers.

"The new design of our Pentium II means we will be able to produce these microprocessors affordably and in large volumes," said Intel spokesperson Manny Vaz. "We are changing the way the industry looks at microprocessors. It is no longer fair to judge a microprocessor from one company against one from another by clock speed (such as 266MHz) alone."

Vaz referred to part of a Pentium II innovation called Dual Independent Bus Architecture which incorporates Level 2 Cache into the microprocessor.

Intel's MMX technology is also built into Pentium II as a standard feature. The Pentium II processor core consists of 7.3 million transistors and is manufactured on Intel's P6 architecture with 35 micron technology.

Intel's Pentium II



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Digital Equipment sues Intel over Pentium technology

Digital Equipment Corp. has filed a lawsuit against Intel Corp., charging "willful infringement" of 30 Digital patents in making, using and selling microprocessor products, including its Pentium, Pentium Pro and Pentium II microprocessor families.

Digital is alleging patent infringement is causing "economic injury and, if not stopped, would cause irreparable harm; the company seeks both an injunction and monetary damages, including triple damages for Intel's willful violation of the patents."

"Over the years, Digital has made substantial investments in developing computing architectures and microprocessor technology," said Digital chairman Robert B. Palmer. "It is our duty to our shareholders, customers, partners and employees to protect our intellectual property rights and the benefits of our industry-leading research and development efforts."

Chuck Mulvey, spokesperson for Intel, said, "This was really a total surprise to us. We will vigorously defend ourselves, but it's too early to give specifics."

The news followed on the heels of reports of a bug in the Pentium Pro and Pentium II processors involving the conversion of certain floating point numbers to integers. Intel has said it will fix this "error" in future products, and will "work with software manufacturers as needed to integrate workarounds into their future product releases."

Borland sues Microsoft, charges unfair competition

(MS) — Borland International has filed a lawsuit against Microsoft Corp. alleging unfair competition.

The lawsuit, filed in California Superior Court in Santa Clara County, charges that Microsoft is "intentionally and knowingly luring Borland employees for the specific purpose of damaging Borland's ability to compete with Microsoft in the development tools market and to slow the company's financial turnaround."

Borland claims it is Microsoft's largest and "most acclaimed" competitor in the development tools market, and that Microsoft has hired at least 50 of Borland's top software architects, engineers, and marketing managers. Borland is asking the court for unspecified financial damages, as well as an injunction against Microsoft as it can't target Borland employees for hiring.

Gotta get Tamagotchi?

Now in Canada, Tamagotchi features a built-in little LCD screen with a digital "life form" covering, eating, sleeping and going to the bathroom. These little gadgets are a new sensitive electronic toy that has become a sizable craze in Japan.

A Tamagotchi has a microprocessor built in, along with a simple user interface and a "decision tree" logic engine which allows the



user to influence the growth and emotional health of the Tamagotchi via a set of control buttons. The Tamagotchi chirps when it is lonely or hungry, or needs its litter box cleaned. It chirps a lot. If the user takes maximum care of his or her pet, the Tamagotchi can theoretically last for 28 days.



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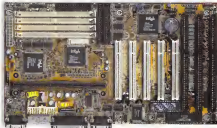
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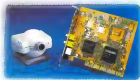
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Canadian vendors quick with Pentium II products

Simultaneously with the official launch of the new Intel Pentium II processor, many of Canada's largest PC makers announced new models of desktop and server computers based on the new chip.

IBM Canada Ltd. announced the latest in the IBM PC Co.'s line of professional workstations — the IntelliStation M Pro, targeted at high-end professional applications such as digital media content creation, software development, MCAD and ECAD.

According to Min-chang Cho, the brand

manager of IBM Canada's Client Systems division, "The IntelliStation M Pro provides our customers with Intel's latest microprocessor technology in a standards-based platform while integrating advanced manageability and security features unmatched in the market today. The IntelliStation M Pro complements the recently announced IntelliStation Z Pro, which features Pentium Pro processors providing maximum scalability and support for applications that require a second processor or maximum memory usage." The new IntelliStation M Pro systems utilize either 366MHz or 300MHz Pentium II CPUs, and estimated retail pricing varies from \$5,950 to \$10,900, depending on configuration. The systems come with a three-year parts-and-labor warranty and one-year on-site limited warranty. IBM also announced a PC 1500G series of Pentium II based high-end commercial desktop PCs, ranging in price from \$3,900 to \$4,750, depending on configuration.

Adobe Systems announced that some of its key applications will be optimized for the Pentium II processor, including Adobe Photoshop, Adobe Illustrator, Adobe PhotoDeluxe.

For more information, see http://www.cdw.com or http://www.ibm.com.

Wang Canada has joined Computers for Schools

Wang Canada Ltd. of Scarborough, Ont., has joined Industry Canada's Computers For Schools program. Participating corporations sponsor increased access to information technology by donating surplus computers and software to elementary and secondary schools across Canada. "Our agreement is unique



because it not only supplies surplus computer equipment to the program, but the staff and facilities of Wang offices across Canada will be available to help refurbish and deliver the computers," said Robert Lerner, president and general manager of Wang Canada, in a statement.

What do YOU think?

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Page 16

Canada's Eurocom expands its notebook line

Denver-based Eurocom has become the first mover in the Canadian notebook market in the last year, perking a line of high-powered, moderately priced notebooks into rapidly increasing sales.

The two latest models, the Eurocom 6200 and 7200 models, have been designed specifically to let the company lay claim to the boast of having the highest-featured "power users' notebooks on the market.

The Eurocom 6200 was the first notebook to support the Intel Pentium MMX technology, and the first notebook to ship with a 300MHz MMX processor. The recently introduced Eurocom 7200's feature list includes a 14.1-inch XGA active matrix screen (with a viewable area equivalent to a 15-inch desktop monitor), up to 4MB of Video RAM, and up to 256MB of RAM, 512Kbps of cache, 6GB of hard drive capacity, a 200MHz MMX Pentium, two Universal Serial Bus (USB) ports, a DVD-ROM drive, 3D Audio, a MO drive, and four PC Card slots. This configuration would constitute a real dream machine in a desktop system: the list that Eurocom can suggest packing this much capability into a mobile PC has attracted a good deal of attention.

A great many computer users, of course, don't need anywhere near this sort of power to write letters or catalog recipes, but Eurocom representative Steve Robbins claims that Eurocom has become the only Canadian notebook maker in the top 10 notebook suppliers in Canada on the basis of its high-end features. "The outstanding feature set has definitely attracted attention, and has resulted in strong sales of the Eurocom 6200," Robbins stated. "We expect a similarly positive response to the Eurocom 7200." Eurocom is actively seeking qualified new resellers. Call (416) 224-6122. DR



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Comdex/Canada Raises The Bar

Computer show announces new age policy will bar attendees of less than 21 years.

by Adam Thwaites

Novell Canada Ltd. recently announced 16-year-old Cory Jensen has become Canada's youngest Novell Certified Internet Professional.

He is an honors student at Harry Ainlay Composite High School in Edmonton, and is also employed as Webmaster at Executive Computers Limited in Edmonton. By all accounts, Jensen is typical of a growing cadre of young, bright, and capable people who may drive the computer industry of the future.

But Jensen, and others like him, will be barred from attending the Comdex/Canada '97 show, scheduled to take place in Toronto, from July 9 to 11.

That's because SoftBank Comdex, the organization that produces Comdex/Canada, has chosen to exclude them. In material sent to show potential exhibitors, SoftBank Comdex announced that "no one under the age of 21 will be permitted on the show floor or in the conference." The previous age limit for both show and conference was 16.

(For the Comdex Canada '93 show, the admission fee has also been raised — from \$50 to \$75. That, as SoftBank Comdex tells potential exhibitors, "means raising the quality of attendees you will see on the show floor.")

What's up at Comdex?

Bob Berkebile, spokesperson for SoftBank Comdex, says "The reason that the age limit was increased to 21 is that our exhibitors over the past few years have wanted to see more qualified attendees. They feel anyone over the age of 21 is better qualified to make a buying decision than those who are younger."

Cory Jensen might not agree. Nor does Jonathan Strass, who's the show director of the Winnipeg Computer Expo. He's also 17 years old. Strass says, "I've been attending Comdex and many other industry trade shows

With this new ruling, I feel I'm being shut out by Comdex, and not given the same opportunity as someone just a few years older.

— Omar Asfour

for years, and I've never witnessed any issues or difficulties with younger attendees. Comdex isn't a consumer show, so the only young people who attend are usually involved in the industry already, and therefore an excellent target for exhibitors. I think Comdex is doing a disservice to its exhibitors by eliminating this audience segment from the show floor."

People like Omar Asfour attend Comdex — and other computer shows — because they're looking to the future. Asfour, 17 years old, and Webmaster at up Systems Inc., an Internet services provider based in Brampton, Ont., says: "Being employed in the Internet industry, I feel it's very important that I keep up to speed with what's new and happening in the world of computers. With this new ruling, I feel I'm being shut out by Comdex, and not given the same opportunity as someone just a few years older. Why should we be denied the chance to learn?"

Philosophical issues aside, Comdex faces some practical consequences of its "over 21" ruling — will potential attendees be checked at the door to see if they measure up to the age limit?

SoftBank Comdex's Berkebile says "There won't be any age police at the event. However, we will make sure that those individuals who do attend or exhibit at this event keep the look-and-feel of the event for the

business community."

Strass says that, at previous Comdex shows, "I've seen professional and industry managers crowded to the door. Individuals who have fallen under this age (16) have been forced to leave — usually taking their entire party of 'qualified' Comdex goers with them. I think that leaves a bad taste in everyone's mouth — and it certainly doesn't help out the exhibitors. This will become even more evident now that the age of admission has been raised by five years."

Also looking to the future is Jared Strass. He's 15 years old, and in Grade 9 at Westmount Collegiate Institute in Mississauga, Ont., where he takes a solid set of computer subjects. He is one of many teens who has designed his own Web site, and plans to continue his studies of HTML, programming and Internet applications, with a view to eventual employment in the computer industry. "I think this is a very poor move on Comdex's behalf. We're the next generation to go into the workplace and use computers. The rule's pathetic. I really don't believe you can judge someone's expertise in any field by their age or wallet size."

Jonathan Strass, Omar Asfour, and Jared Strass will not be going to the Comdex/Canada '97 show, simply because they were born too late.

Strass says: "The under-21 'industry misfits' of today will be tomorrow's industry leaders — they should be a key target group for any technology company." ☐

Adam Thwaites is a freelance journalist who specializes in on-line and mobile computing technologies. He can be reached at adam@comdexdirect.com.



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Preaching Notes To The Converted

By David Teneke

For several years, I've admired Lotus Notes from afar.

I say from afar, because while I've never worked in an organization that actually used Notes, I've been intrigued by its success in life. Before the Internet and intranets picked up terms like collaborative computing, there was Notes, the seminal groupware product. But I'm also puzzled that Notes isn't even more popular or widely used than it is.

That's not to say the product hasn't seen success. Notes installations at some corporations measure in the multiple thousands of seats. For example, one of the more impressive cases of a Notes implementation is Industry Canada's Strategic Web site, which was launched in March 1996. With 28GB of data on-line, it claims to be Canada's largest Web site.

Industry Canada's business is to create and distribute reports on international trade, which business can then use to identify new markets, and gather other global trade intelligence. Industry Canada worked with a Lotus business partner to implement a Notes-based electronic publishing system. Using the publishing system, various Industry Canada workers spread across the country can create, approve and publish the reports. The final reports are formatted in HTML, so they are then accessible through a standard Web browser. I've read that Industry Canada could be working on as many as 350,000 documents at any given time. The site itself has more than 750,000 pages of information.

During the Lotus Symposium 97, held in Vancouver in May, a few other case studies were presented. These included presentations by representatives from the Loewen Group (funeral homes), North Shore Credit Union (finance) and the City of Port Moody (municipal government).

And sharing the keynote stage with Lotus Development Canada general manager, Lorna Rosenzweig, speaker Gordon Buntup of Worldwidow of Canada described how Worldwidow and its U.S.-based parent company deployed Notes across several locations spanning the globe. But beyond the anecdotal, Buntup also revealed one of the keys to a successful Notes implementation. He said,

above all, Notes requires a change in corporate culture. Unless there's a will within an organization to adopt a new way of doing things, Notes won't happen.

That is certainly one barrier, but I think another problem is a longstanding confusion about what Notes is or does, exactly. Word processors and spreadsheets are easy for people to grasp because they know about typewriters and columnar grids. But what's the real-world referent for Notes — a committee meeting? Group problem solving? E-mail? The routing slip? Each of these hints at what Notes is about, but an analogy that snaps the essence of Notes into sharp focus remains elusive.

"But what's the real-world referent for Notes — a committee meeting? Group problem solving? E-mail? The routing slip? Each of these hints at what Notes is about, but an analogy that snaps the essence of Notes into sharp focus remains elusive."

And Lotus isn't helping to sharpen the conception of Notes with its current naming convention. What exactly is Domino? Is it a new name for Notes 4.5? Or perhaps it's a superset of Notes. Officially, it's called "Lotus Domino 4.5, Powered by Notes," and I think it's Notes Server that's been Internet-enabled.

Then there's the Domino-on-whatever line of products. We have Domino Applications (and within that a set of modules called Domino Action), Domino Doc, Domino Merchant and Domino Broadcast. This naming scheme is more an indication of groupthink than a testament to groupware. And that's a pity, because there are some interesting and potentially useful products here. For example, Domino Broadcast for PointCast looks like a cool way for a human resources department to distribute internal news. Essentially, the product integrates a Domino server and a PointCast server so that the corporation can add a custom channel to the PointCast window. Then, along with the Weather Network, the Globe and Mail and other feeds that PointCast pushes to the

desktop, users would have a stream of their corporation's news and information.

Next product, but the uninvited will remain closed out, because Lotus is preaching primarily to the converted. In one of the Lotus Symposium sessions, the presenter asked the Notes users in the audience to show their hands. Most members of the audience raised their hands.

During her keynote address, Lorna Rosenzweig underscored the growing importance of the Internet and intranets to business, and the role Notes could have in the new landscape. She read the communications



infrastructure of the corporation was being transformed from a staff-facing to a market-facing system, and responding to this new public required a new set of rules.

In a market-facing system "barrier through" isn't good enough, she said. "Business doesn't say 'I want to build a Web site.' They say 'I want to get closer to the customer or I want to stay ahead of the competition.'"

Given the upstart groupware startups aggressively pursuing Lotus's flock, propelled by the explosion of interest in all things "Net-related," that last statement rings especially true for Lotus itself. ☐

Industry Canada Strategic:
<http://strategic.gc.ca/Notes/>

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David Teneke is a Vancouver-based journalist specializing in high technology, and is News Editor of *The Computer Paper*. He can be reached at dten@tcp.ca.



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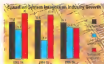
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System Integration Healthy In Canada

By Leslie Arnold and Margery Leach

The Canadian systems integration (SI) industry has enjoyed consistent steady and strong growth over the past few years, despite shake-ups that saw some of Canada's top players taken over by multinationals. These conclusions are based on a recent Branson Group Inc. study of trends in the Canadian SI industry, employing the Branson90 database of Canadian independent software and services companies. Branson analysed the revenue growth of the top 50 SI firms from fiscal year 1993-94 to 1995-96. The study showed average growth over the previous year for the top 50 companies hovering around the 50 per cent mark each year.



Branson also found that, despite their lower overall revenue figures, the smaller companies have traditionally experienced slightly stronger growth than the top revenue generators. This was particularly notable in

1994-95, when the smaller companies enjoyed rates that double the growth of the top 10 revenue generators. This finding may have resulted in part from the fact that some of the country's most profitable SI firms, such as SII, Sysconline and DMR Group were swallowed into major multinationals.

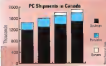
Branson has observed that, until recently, the larger companies have tended to operate within established markets, and were not always as quick to respond to changes in the technology and business environment. These external factors can often be translated into growth myths for fast-moving system integrators. The larger systems integration companies seem to now be looking at ways to become more responsive to a changing marketplace, by developing more competitive rate structures, and avoiding clients to implement systems that positively take advantage of trends.

Despite, or perhaps because of technological advancements, customers are finding it more and more difficult to maximize the benefits of their information systems without external assistance. Some of the trends which are driving customer demand for SI services include the speed of technology change, the related difficulty associated with maintaining up-to-date technology skills in-house, the

increasing importance of the Internet, the need to implement new networking technologies, and increasing competition.

Key growth areas in 1997 are expected to include network and facilities management, network implementation, with special focus on the PC, education and training, the Internet/Intranet, and support to mobile users. As well, demand for Year 2000 conversion support will continue strong for the next few years.

Leslie Arnold and Margery Leach are consultants at The Branson Group Inc., in Ottawa — an international marketing and management consulting firm with a stated commitment to "Deferring Competitive Advantage to the IT Industry." Phone: (613) 730-2883, ext. 215 or fax: 613-720-6818.



Reader Poll

A number of computer manufacturers (Compaq, IBM and Dell, for example) have been moving to business models which will allow and/or require readers to order custom computers with specific component/configuration choices.

We asked you:

Which most closely reflects your view of the custom-configuration issue?

28% "We would like to see vendors or distributors set up to allow us to order very specific custom-configurations on behalf of our customers."

41% "We currently do, or hope to be able to offer very flexible custom configuration services ourselves to our customers. We prefer to do that configuration work in-house."

28% "As long as the vendors offer a broad enough range of systems in their product lines that should mean our needs and those of our customers. We can undertake minor configurations if custom orders are necessary."

This Issue:

This year the Canada/Canada computer show has raised the age limit of conference and show floor attendees. No one under the age of 21 is allowed on the show floor in effort to raise the "quality of attendees." (The previous age limit was 16.) Some young people have voiced opposition to their exclusion... but how do you feel?

Our question to you:

Do you agree with Comdex's decision on this matter? Which most closely reflects your view?

- ☐ I don't think an appropriate action is raising the age of attendance to 21 years of age.
- ☐ Comdex should have stuck with the previous age of attendance, of 16 years of age.
- ☐ There should be no age limit for attendance at the Comdex computer tradeshow.

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The Graphics Game — How To Play, How To Win

by Jeff Evans



Full-screen video and real-time 3D are becoming commodity items for the retail PC.

Resellers can capitalize on your customers' desire for life-like computer graphics.

When IBM originally conceived the PC back in the late 1970s, it had very modest visions of what kind of graphics would be needed to perform business data processing.

Most computer terminals looked up to mainframes had monochrome displays, so, it was reasoned, most PCs wouldn't need graphics capability much more ambitious than that. A rudimentary four-color palette was offered to some early PCs, and a lavish 16-color palette was actually offered on the PC Jr. to entice the home computing crowd.

The original Mac, perhaps paraphrasing Henry Ford's attitude towards color, allowed users any color of graphics display they wanted, 'as long as it is black, and white.' However, computer users mostly see the world in color, and they have consistently demanded, and to some extent been ready to pay for, better graphics technology for their PCs over the last 20 years. The result of this natural human desire for computer displays to more accurately simulate the real world (or, at least, the TV version of it) has spawned an industry that has made billions of dollars for resellers who pro-

vide graphics cards to Wintel and Apple Mac owners. End-users show no signs of slowing down as their rising expectations for personal computer graphics, the flood of multimedia software continues to whet users' appetites, and the technology to meet those demands is developing rapidly, so new opportunities for resellers, despite fierce competition and slim margins, are constantly emerging.

The Graphics Food Chain

Historically, there has been a pyramidal shape to the PC graphics hardware market. At the bottom are the graphics chips included on PC motherboards, and 'commodity' graphics cards — whatever is the cheapest (and lowest performing) graphics hardware currently available for the understanding or budget-conscious user.

In the early days of the PC, this meant graphics cards that created monochrome displays, or displays with a handful of colors (four or 16 colors at a time, with a total palette of up to a few hundred or a few thousand color channels), at CGA (320 by 200 pixels) resolution.

In today's version of the graphics card food chain, even a 'commodity' graphics card selling for under \$200 has a formidable feature set, at least 2MB of video RAM, and the ability to display accelerated two-dimensional graphics, with 'true color' (16.7 million color palette) display at 600 by 800 pixels, and 256 color display at 1024 by 768 resolution or higher. A higher-end mainstream graphics card, in order to justify a price of \$250 to \$800 dollars, has to offer something special — typically, extra video RAM (4MB, 6MB or even 8MB), and hardware support for more exotic graphics formats such as 3D rendering or digital video playback or video capture. At the highest end of the graphics food chain are the professional level video and 3D cards, which typically for a few thousand dollars offer commercial production capabilities to CAD engineers, 3D animation, and video or multimedia producers.

PCI Triumphant?

When the PC industry adopted the PCI (peripheral component interconnect) high-speed bus standard, the stage was set for an all-out assault by the PC against the Mac's former

strawhold, the graphics market. Even considering the deliciousness of the Windows operating system and the money status of the PC hardware platform, which combined to offer many more compatibility problems and substantive hurdles to users than the more elegant Mac, PCI graphics cards offered huge graphics bang for the buck. When Apple finally, a couple of years later, got around to incorporating the PCI bus into its Macs, PC graphics card makers such as ATI and Number Nine were quick to offer Mac versions of their graphics cards which blew away the gladdening Mac graphics card developers such as Radius.

As Apple belatedly began to allow other manufacturers to build Mac compatibles under license, the Mac clones opted for the PCI bus and PC graphics cards without a second thought.

Digital Video For The Masses: TV On Your PC Desktop

In many ways, the battle for cheap, excellent quality graphics has been won in the retail computer market. Retailers can supply end users with graphics cards that will output high-resolution two-dimensional displays to any current monitor, for a relatively trivial price. However, end-users now demand that the PC's graphics look more and more like the imagery from a TV.



This requires the capability to display 640-screen (at least 640 by 480 resolution), 60-speed (30 frames per second), animation or less-action video. This is a tough task for the typical PC. If the video is playing off a hard drive or a CD-ROM, it typically involves huge file sizes and data streams of more than 10MB/sec., plus high-speed video data decompression. In the last few years, graphics cards with hardware support for MPEG-1 video playback have entered the market, but the inherently low quality of the MPEG-1 video format has limited their appeal. As well, companies such as Canada's ATI and Matrox have added products that allow PC users to capture, view and manipulate TV-frequency video, for a low extra cost. In early 1997, Creative Labs introduced a DVD (Digital Video Disk) upgrade kit that included an MPEG-1

decoder board as well as a 4.5GB DVD-ROM drive. The MPEG-1 digital video format is capable of very high-quality video imagery — much higher than MPEG-1, regular broadcast or cable TV signals, or even laserlink video.



The 3D Maze

One of the hottest, but most confusing, areas of the graphics card market is in 3D playback hardware. Video games consoles such as the Nintendo 64 offer amazing real-time 3D rendering for a very low price, creating a pressure on the PC to somehow offer similar performance. The new generation of video games consoles are based on custom graphics chips, but as discussed, it's difficult for retail PC vendors to get customers interested in another board-based, non-upgradeable graphics. As well, there is not a real, single standard for 3D hardware or software on the PC. So, in response to a perceived demand, a wave of proprietary 3D cards appeared on the market, from vendors such as ATI and Diamond Multimedia. The proprietary 3D cards are a klutzy response to the video games console challenge, since they present all kinds of compatibility issues that will probably never actually be solved until widespread market demand forces them irrelevant. In the meantime, though, the substantial number of hardcore gamers in the PC market presents retailers with a considerable opportunity to sell 3D acceleration cards. Just be warned — they may have a short shelf life, so you may not want to invest in large inventories of these products. As with so many other areas in the PC industry, order may end up being imposed on the chaotic proprietary 3D world by Microsoft, whose Direct 3D API is being touted as the solution that hardware and software developers may end up being forced to live with, whatever its technical merits or deficiencies.

It's also worth noting that there has historically been a big gap, technically and in terms of price and margins, between consumer-level 3D playback cards and precision professional level 3D animation and CAD cards. The consumer cards slip test scores onto polygonal shapes to provide a 'quick and dirty'

3D display at fairly high frame rates. The precision, however, is far too low to be suitable for computer-aided design or commercial 3D animation. That, however, may change. There are convincing rumors that high-end 3D card technology may filter down to the consumer level in 1997/1998. This would mean a 'one-cut-fits-all' scenario, with moderately priced cards that can offer a wide range of functions for business software users, gamers, multimedia CD-ROM users, Web surfers, and graphics, CAD and software professionals.

Lowest Common Denominator

One factor to keep in mind is that in a PC marketplace where many customers are not overly knowledgeable about what's inside the PC box, they are buying, these will always be a large market share for 'one-size' graphics cards that are 'good enough' — cheap and not offensively bad. This means that for every sale where a leading-edge brand-name graphics card is a sales failure, there will be at least one other sale where it's irrelevant to the customer. As always, retailers must qualify each customer's needs, and offer what matches the customer's budget and intended applications.

The Contenders

A wide array of graphics hardware suppliers are competing for the different sectors of the PC graphics market. Some of the more significant or more interesting include:

ATI: One of the leading makers of graphics cards worldwide, ATI Technologies Inc. is based north of Toronto, and like Matrox, the other major Canadian graphics card maker, has benefited from a history of aggressive research and development resulting in a proprietary family of high-powered custom graphics chips that give it a competitive edge over the competition. ATI stumbled slightly a few years ago, when it pushed premature and overly ambitious attempts to create digital video products failed, and a number of products were delayed. Also, ATI's motion line languished under the fierce competition of the marketplace, and was discontinued. However, a re-focusing on the company's core business of affordable, high-powered graphics cards has been highly successful, both in terms of product quality and sales.

ATI's recent offerings include the 3D Xpress and PC2TV board, a general purpose 3D and 2D accelerator, the 3D Protrator PC2TV, a professional 3D and CAD accelerator, and the Xeon line of PCI cards for computers running the Apple Mac OS.

ATI has even returned to the digital video market that it had so much trouble in several years ago, with the All-In-Wonder card, a seven-in-one graphics and multimedia upgrade

card which incorporates a "smart" TV Tuner, 3D Graphics Acceleration, Dual MPEG 1 playback, Video Capture, Video Output and Display, 3D Graphics Acceleration, and a bundle of software optimized for use with the card. The All-in-Wonder is aimed at the gamer, hobbyist and videophile market, and represents a good entry-level solution for those wanting to merge computer and television graphics at a low price.

Matrox: Montreal-based Matrox is one of the most innovative graphics card developers in the world, and gains much of its market advantage from designing its own powerful custom chips. Originally a premium, high-priced vendor of specialist cards for the professional graphics market, Matrox deliberately re-engineered its product line in the early 1990s to offer affordable high performance products to the mainstream PC market, with a very high degree of success. The company's current hit products include the Matrox Mystique, billed as "The Complete 3D Entertainment and Multimedia Accelerator" — an inexpensive 64-bit PCI graphics card with hardware support for 3D texture mapping, and either 2MB or 4MB of video memory. The Mystique, as is common with many proprietary 3D cards, comes bundled with an assortment of compatible 3D games to give an appealing "out-of-box" experience to games enthusiasts. For example, the Mystique formed a bundled version of the Destruction Derby 2 in time for the Christmas 1996 sales season.

A large part of a 3D card's success relies on the manufacturer successfully juggling in the software developer community to bring games developers on-side with releases of popular titles that support the graphics card maker's proprietary hardware. Matrox has been quite effective in this effort, enticing major software developers such as Mindspace, Activision, Polygram and Virgin/Cinemax. Matrox's other big hit over the last 18 months has been the Matrox Millennium card, billed as a "high performance professional graphics accelerator," optimized for Windows acceleration, and upgradeable with a full range of video add-ons. The new Rainbow Runner video product line consists of video upgrade modules for the Matrox Mystique. The Rainbow Runner Video module allows a high degree of "convergence" between PC graphics and television, with PC-to-TV output, hardware MPEG 1 playback, video input from external video sources such as camcorders, and bundled video editing software. The Rainbow Runner TV module is an ISA TV tuner upgrade board for the Matrox Mystique and Rainbow Runner Video module, enabling high quality TV viewing on the PC. **MIRRO:** A German company, Mirro has been a

leader in digital video cards for the PC for several years. It first caught attention in one of *The Computer Paper's* Test Lab surveys of graphics cards with its DC10, a combination graphics card and digital video kit, which offered impressive price and performance for its time (1994). The current state-of-the-art Mirro DC10 system is available for both Mac and Windows, and offers excellent quality Motion-JPEG video capture, editing and output. At a Canadian retail price of over \$1,000, the DC10 is probably above most consumer PC users' budget, but according to Toronto's Forefront Graphics, a specialist graphics and video VAR, it has been exceedingly popular with PC users who need midrange digital video capability on a moderate budget. It will be interesting to see how Mirro fares against competition from mainstream graphics card makers such as ATI and Matrox, who are offering somewhat lower quality, but far lower-priced digital video options to their products.

Number Nine: This company is another "old-timer" in the graphics card industry, dating back over a decade, from its beginnings as a relatively high end 3D graphics card maker. The company has weathered the storm of low-priced competition well, and is regularly a contender for awards in computer industry product surveys. At various times, its 128 bit graphics cards have been ranked the fastest in the industry. Number Nine has flourished as the Mac PCI market, regularly "blowing away" long-time Mac graphics leader Radius in terms of price/performance, according to company representatives. Radius is a progressive company from an R&D perspective. It's rumored to be bringing professional CAD and 3D animation precision to an upcoming generation of modestly priced graphics cards. If the actual products live up to the advance buzz, Number Nine could put some severe pressure on high-end CAD and 3D graphics card manufacturers. On the other hand, it could in the same time greatly expand the market for professional level graphics cards. **Target:** Once a subsidiary of AT&T, Target was dissolved in the PC-based video and animation market in the mid-to late 1980s. The company went through some hard times after being spun off from AT&T, but is still a player in certain parts of the graphics-card market, with its Target 3000 Pro/Diagnost 3000W Digital Video Suite (a bundle of hardware and software that provides a complete 3D graphics and video editing solutions), and the Baseado 3000, a somewhat simpler, low priced desktop video solution. Unlike Matrox and Number Nine, which re-engineered themselves to compete in the mainstream PC graphics market, Target has decided to bet on the digital video niche.

Teknium: This company, more widely known as

Canada for its PC motherboard products, also produces a bundled kit which includes either a model C-210 video capture card or a VC-264V72 combo capture and graphics card as part of a video conferencing system.

The package is named the Flow-U kit, and includes a digital camera and microphone, web browser and VIDEOPHASE software, all as part of a complete Internet videophone solution.

The Future

The combination of apparently endless increases in product performance, affordability, and end-user demand offers retailers a constant stream of business, but at the same time suggests some risks that should be avoided. The graphics card market is so sensitive to competitive changes in price and performance that once dominant players can find their products eclipsed by the competition almost overnight. Unless retailers are offered progressive price protection by manufacturers, they should be very wary about carrying much inventory of graphics cards. Because a substantial part of the computer-buying public doesn't "need" leading-edge graphics, there is also an opportunity for retailers to offer attractive PC system prices by mixing in "last year's model" or commodity graphics cards where those will meet budget-minded users' needs.

Above all, be prepared to see PC graphics technology make sudden advances in unexpected directions. Real 3D, a Lockheed-Martin Aerospike subsidiary, is an example of a disrupter that is intent on providing high-speed graphic engines at a low cost to bring real-time, precision 3D rendering to the desktop. Other companies, including Silicon Graphics and Hitachi, have 3D and video chip technology that may make its way from the workstation to the video games market over to the PC graphics field with considerable effect. And, working in the wings, as ever, are Microsoft and Intel, with their own dreams of dominating the market by setting technology standards for the convergence of computer graphics, video, and telecommunications. ■

For more information, contact:

ATI: <http://www.atitech.ca>, (800) 882-2600

Matrox: <http://www.matrox.com>

(514) 960-4300

Real 3D: <http://www.real3d.com>

1-800-393-7770 or (401) 366-7302

Target: <http://www.targetvision.com>

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There's No Place Like Home

by Paul Lema



People who run small businesses are their own marketing, accounting, purchasing, manufacturing, quality control, distribution, human resources, and IT departments.

This can be overwhelming for a person running a new business who may lack advanced computer skills.

While Canada's overall job creation record has been dismal the last few years, there is a silver lining in the dark unemployment figures. Statistics Canada notes down on a regular basis. Since July, self-employment figures have surged by 31 per cent. That represents an increase of 294,000 jobs, according to *StatScan*.

Often working from home or small offices, over two million Canadians are now self-employed.

Downsized — laid off by companies seeking to maximize profits by doing more with fewer human resources, or cut by government agencies that have had budgets slashed — many of the new businesspersons consider themselves "reticent entrepreneurs." Instead of envisioning businesses designed for growth and expansion, businesses that create jobs for others — small office, home office (SOHO) entrepreneurs conduct business to meet what federal government's Self-Employment Assistance (SEA) program describes as "replacement needs."

These new business may be an implication for computer resellers. The implications are two-fold: one, a number of resellers are now working from home-based offices; two, resellers are discovering the SOHO market.

Donck Koughan is an authorized Hewlett-Packard dealer and a congruent value-added reseller who is targeting the SOHO market. And he's busy. The owner of Scarborough, Ont.-based Printmag Software Inc., a two-year old home-based business, has hired two employees and business is booming. Even so, the 38-year-old entrepreneur has taken a contract with IBM where he works on contract as a network engineer.

"All I miss gets pumped back into the business," says Koughan who hopes to get the business out of the home and into an office within six months. It seems an achievable goal considering the business grossed \$82,000 in its first year and almost \$200,000 last year.

"I guess I'm doing okay," says Koughan who focuses on computer and networking sales, service and support for small businesses. "The company pays its bills and allows me to pay my debts" accumulated after he was laid off from his job as information technology manager at a now-bankrupt construction company.

People who run small businesses are their own marketing,

accounting, purchasing, manufacturing, quality control, distribution, human resources and IT departments. This can be overwhelming for a person running a new business who may lack advanced computer skills.

Instead of shopping at a Computer City or Future Shop, a SOHO entrepreneur is likely to rely on a company like Printmag Software for a variety of value-added computer services — including building a computer system, installing software, getting the company on-line, and troubleshooting hardware and software technical problems.

"You can't always afford the time to take to run back to a shop with your computer if something goes wrong," says Marsha Mandel who runs a Toronto-based desktop publishing company. "I'd rather have help come to my office, even if I have to pay a premium. It's worth it because I get the problem solved here and don't have to leave my office as I can still service my clients."

All the major computer players acknowledge the existence of the home and small business market and are producing software and/or hardware aimed at this market. Apple Computer Inc. recently unveiled a small business Macintosh to complement its Power Macintosh series. In conjunction with the Power Macintosh 6500 and 4400 systems announced in early April, Apple Canada Inc. unveiled the Apple Small Business Macintosh Series of computers.

"This configuration of the new 6500 and 4400 systems provides users with a comprehensive small business solution right out of the box," said an Apple spokesperson. The systems are bundled with industry-standard software, and feature a built-in fax modem,

132x-speed CD-ROM drive, digital monitoring system, and speaker phone.

"The Small Business Macintosh Series focuses on the needs of the small business market-place and provides tailored solutions for this market," said Deane Church, product manager, Apple Canada Inc.

Apple worked with groups such as the Apple Business Consortium to take the guesswork out of selecting what's necessary to run a start-up business.

Philips Electronics Ltd. claims its new Brilliance 105 high-performance monitor places 5040s in the spotlight. The 15-inch model, with its compact design, is ideal for general use as well as graphic and multimedia applications for the small and home office, says Iain Hanna, vice-president and general manager, Philips' professional products and systems division. He describes the Brilliance 105 as "Philips' Value Monitor" and says its "competitive price-performance ratio will completely satisfy even the most cost-conscious consumer."

But what makes it ideal for the 5040s market? Standard 14-inch monitors have a curved cathode ray tube (CRT) which makes their screens appear rounded, and creates distorted images. The Philips 15-inch monitor has a flat square screen, offering users a larger viewing area, sharper images, and a "what-you-see-is-what-you-get" quality with little distortion. It's also flicker-free which will save the eyes of any 5040er who spends hours and hours in front of his or her computer.

Many computer companies are forging partnerships or altering channel plans to find ways reach the small business market.

Novell, IBM Do Small Business

Application software partners are lining up behind InternetWare For Small Business from Novell which has received support from leading independent software vendors (ISVs), allowing small business customers to obtain affordable applications and tools for running networked businesses more efficiently.

InternetWare for Small Business offers businesses with fewer than 25 networked users a networking solution that is easy to install, manage and maintain, according to Novell. It offers user-based pricing so customers can cost-effectively add more network users as their businesses expand.

"Small businesses want complete solutions that work," said Jeff Vogen, product manager for Novell Canada. "We are among strong contenders for InternetWare For Small Business, not only from hardware partners but from application solution providers as well."

3Com, Chrysant, Excel, Omni Point, NetPhone, Sigsoft, SRT Accounting Systems and SIMA are partnering with Novell to build business applications that rely on Novell's network environment, furthering Novell's efforts to meet the specific needs of small businesses. These partnerships will provide business critical applications including accounting, telephony, backup and disaster recovery software, along with networking routers and hubs, offering customers complete and integrated business solutions, said Vogen.

IBM is increasing its media channels to boldly pursue the small and medium-sized business market. "We've based our moves on what the market is doing," says Heather Ross, small business executive at Markham, Ont.-based IBM Canada Ltd.

Having computerized an entire business function, what the market is doing getting connected. Medium-sized businesses use networking and the Internet as the next step in their automation — a strategy that requires solution-oriented vendors, says Ross.

To ensure its vendors provide this market with appropriate solutions, IBM is placing its emphasis on second-tier dealers "because that's where small business typically shops," says Ross.

"Our business partners will be our primary way to deliver solutions to medium and small enterprises," said Richard Thomson, IBM Corp.'s chief financial officer. "We're putting this into place worldwide. You're going to see our spending in channels and promotions increase."

While IBM has used walk dollars to gain share in large commercial accounts, resellers say a similar strategy in small business is needed to penetrate that market. "IBM is saying here's money to help you make it happen and to motivate you to make it happen. But I think everybody is in at least that level. That's how you reach that market place," said one analyst.

Ross admits the company is looking at soft dollars to support marketing, education and sales. However, the emphasis will be on providing leads for dealers and providing them with greatly increased support. To demonstrate IBM's smaller commitment, she cites the company's Business Partner Charter that provides IBM's customers with higher commissions for closing deals with resellers rather than direct, and emphasizes closer lead generation. IBM has also said it will take hardware and software products, including PCs and midrange systems, to create special bundles targeted for small and medium enterprises.

So where does all this leave today's reseller? It leaves them like Derek Kozomnik working from home and selling to the home based business market.

And loving it. ☐

Paul Lema (paul@adinet.com) is a freelance writer specializing in high-tech and communication issues.

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The Low-Down On Viruses

Your customers are under regular attack by marauding computer viruses. What can you do about it?

by Don McLean

They're as contagious as common colds and just about as impossible to avoid.

Computer viruses, like colds, come in millions of strains and types and there's literally no medicine which can protect systems from being exposed. Computer viruses are insidious and often go undetected until the damage has already been done. And they're rampant.

According to the National Computer Security Association, in 1995, more than 98 per cent of U.S. corporations experienced a computer virus-related problem, resulting in an average of 44.3 hours recovery time from a virus incident.

Most everyone is familiar with computer viruses these days — those troublesome pieces of software designed to spread undetected and venetian to wreak havoc on your computer by altering the way it works.

Viruses are segments of program code that implant themselves in an executable file, then spread systematically from one file to another.

The initial symptoms are usually non-existent, but the damage they cause can be devastating — erasing of disks, corruption of programs and all manner of software destruction.

Viruses Come In Various Types:

- **File Infectors** — are viruses which attach themselves to or replace COM and .EXE files. With this type of virus, unaffected programs usually become infected when they are executed with the virus in memory. In other cases, they are infected when they are opened (such as using the DOS DIR command).
- **Boot Sector Infectors** — boot sectors, contained in hard disks and floppy drives, contain a program which loads DOS system files. You get a boot sector virus by leaving an infected diskette in a drive and rebooting a machine. When the boot sector program is read and executed, the virus goes into memory and infects a hard drive.
- **Master Boot Infectors** — a similar attack to boot sector infectors only the invasion takes place in the first physical sector of a hard drive where the disk's master boot record and partition table is contained. This virus is spread the same way that boot sector infections spread, by leaving an infected diskette in a drive and rebooting the machine.
- **Multi-Partite Viruses** — are a combination of the viruses listed above. They infect both files and master boot records or both files and boot sectors. These virus types are currently rare, but the number of cases is steadily growing.

Viruses come in benign or malignant forms. A benign virus won't do any real damage. It controls itself until a predetermined date or time, then when activated, will do nothing more than display some sort of message. It is the malignant varieties that do the real damage.

It is administrators cannot show they have done the best job possible to protect against attacks through the purchase of appropriate virus detection tools, then a business could be deemed at fault for such an attack.



A malicious virus might alter one or many of your programs causing a net to work the way it should, in the best case scenario. In the worst case, the infected programs might function abnormally, write incorrect information into your documents or the virus may alter the directory information of one of your updates. You just never know.

Unfortunately, these malignant forms constitute the highest percentage of computer viruses.

What can you do to absolutely prevent your computer systems and the systems you sell from being exposed to a virus? Anton Aylward, a computer security specialist with Toronto-based consultants, Straker and Strachan, says the architecture of most operating systems make it impossible to prevent virus attacks.

DOS and Windows, for instance, don't have adequate code/data separation and can't distinguish between the two. That limitation is the key to how viruses strike. Aylward said, explaining that, an attacking "module" viruses attempt to feed in data and make systems believe it is code.

"One of the absolute true blue beliefs (at one time) was that you couldn't execute a text file. Well, DOS doesn't know about text files," Aylward said. "Under Unix, VMS and Macintosh OS, a file has a type — a signature inherent in what it is. In DOS (a file type) is just a file name. So, if I come along and create a text file that has just the right characters and I rename it — instead of .TXT to .COM (for example) — it becomes an executable as far as DOS is concerned. There is nothing inherent (in DOS) that says, 'This is code and this is data.'"

He offered the example of sending an E-mail that has a Word attachment that contains elaborate scripts or a PowerPoint slide. It may not be pure text, but it is still text that you display and read, rather than code the user executes. There can be what are called "bugs" contained in Word and Excel documents that allow the user to send what is really text that fools a machine into executing it. Aylward said.

So What's Your Customer To Do?

"Don't use Windows or DOS," is Aylward's curt response. Admittedly he agreed such an option is neither practical nor viable for the vast majority of computer users.

"Don't download stuff," is his second suggestion and, alas, not a realistic option. So accept the risk of infection and apply the principles of "due diligence" to minimize the damage, he recommends. Due diligence is the golden rule to be applied when determining how much virus protection you need and to what lengths you should go in to order to combat infection. There are vast differences in applications, depending on whether you are a business or simply a casual home user.

As a business level, computer users should approach the task of virus protection similar to how you might pool an ocean into "As a business level, the idea of connecting to the Internet by just letting people have dial-up access on their desktops is total irresponsibility, from a basic point of view. It means you have no control, no monitoring — you really have no idea of what's really going on in your organization," said Aylward.

The first layer of the ocean shield should be a single point of contact to the Internet through a firewall. There are tools which can be added to the firewall which represent a second layer of the shield. These might include E-mail filters which ensure any E-mail that enters a network doesn't contain malicious viruses.

Firewall proxies might also be used. A proxy might buffer all data downloaded then send it out through a store-and-forward fashion after examining each data packet in a search for viruses.

Exercising due diligence is especially critical for business. It's a question of liability in the most extreme cases and if IT administrators cannot show they have done the best job possible to protect against attacks through the purchase of appropriate virus detection tools, then a business could be deemed at fault for such an attack.

Due diligence means making purchases of adequate anti-virus weapons that are appropriate to the risks involved and the protection mechanisms available. "It is an ocean ship and you have to think in terms of risk, exposure and accountability," Aylward said. "We know realistically, you can never have 100 per cent protection against anything. It comes down to risk management — the cost of security versus the cost of exposure. "Somewhere along the line you have to accept the risk. Then you assign the risk and that's what insurance companies are for. But, insurance companies are not going to cover you unless you exercise due diligence. You've got to put these costs into balance," he continued. "The balance point for corporations, which have more valuable assets, and the balance point for individuals are completely different."

For home computer users, the task is much simpler. Individuals are benefiting these days from the wealth of comprehensive anti-virus tools originally built for business.

Symantec Corp. (<http://www.symantec.com>), and its Norton anti-virus tools, and McAfee Associates Inc. (<http://www.mcafee.com>) are among the leading purveyors of anti-virus tools for stand-alone and networked computers. McAfee's VirusScan includes versions for Windows 95, 3.1, NT, plus Macintosh and various flavours of Unix.

McAfee has announced VirusScan 3.0 for Windows 95 and VirusScan Deluxe 3.0. According to the company, VirusScan 3.0 has been enhanced to provide higher virus detection rates, Office 97 application protection, automated updating via Internet "push" technology, and free electronic upgrades to new versions.

"VirusScan 3.0 takes the bar on virus detection rates, ease of updating and worldwide support for our customers," said Bill Larson, McAfee's president, chairman and CEO, in a statement. "We're investing aggressively in both development and virus research to maintain the best detection rates available."

Symantec offers its Norton AntiVirus in a variety of flavours, including versions for Windows 95, Windows NT, Windows 3.1/DOS and NetWare. And Symantec has just announced its Norton Multi-Tier Strategy for anti-virus protection in the corporate corporate environment. The strategy integrates the Norton AntiVirus product line at the desktop, and server, as well as the Internet gateway and firewall loads.

"Today, with more virus threats resulting from e-mail and communications via the Internet, it is critically important for our customers to be protected. The current computer epidemic includes Internet viruses that are having a rapid spread of massive viruses transmitted via e-mail attachments and file downloads," said Ronan Salem, vice-president of Symantec's Security and Assistance Business Unit, in a statement.

Renowned ThunderByte Corp. (www.thunderbyte.nl) — the product that detected a virus in on-line copies of the federal budget a couple of years ago — offers an integrating solution which incorporates five different virus detection routines as well as an anti-virus scanner which can be set to wake periodically and perform a scan of all drives.

Of course the key to using any of these solutions is to keep up with the virus makers by continuing to download the updates as they become available, Aylward said. "There are good virus scanners out there, so we then get back to the issue of due diligence. If you're going to be downloading software, then you'd better be running an up-to-date virus scanner from a reputable company and get the updates regularly."

"But you will can't be 100 per cent safe — ever." □

Don McLean is a Toronto based journalist who specializes in high technology reporting.

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Understand The Dangers Of Macro Viruses!

by Sean Eltrington

The recent discovery of the first Office 97 virus (on Microsoft's Web site, no less) has illustrated the speed at which new viruses, particularly macro viruses, are being created and spreading. Some experts suggest that there are more than 200 macro viruses alone 'in the wild' circulating around the world, with more being discovered every week. And eradicating them is not cheap — one recent study put the cost of eliminating a virus attack at \$8,000 per incident!

"Some experts suggest that there are more than 200 macro viruses alone 'in the wild' circulating around the world, with more being discovered every week."

The proliferation of macro viruses, which can frequently spread via E-mail attachments, poses a real problem for MIS managers.

Realizing that no one vendor can catch everything, many users want to use two or more anti-virus products to ensure that they catch as many viruses as possible before they wreak havoc on their network. The problem is that loading two or more anti-virus products on every desktop can be a nightmare since they may conflict with each other and cause confusion to end-users.

In this situation, adding anti-virus protection to an E-mail or gateway server may be a good option.

Of course, relying on gateway anti-virus protection alone probably doesn't make sense, since you should have desktop anti-virus software in place anyway, but it can provide a strong second line of defense and reduce the reliance on one vendor for protection. Gateway anti-virus software usually runs on E-mail or proxy servers and intercepts inbound E-mail and E-mail attachments, but they can also be configured to scan inbound Web traffic to check for viruses or block hostile Java applets. Upon detecting a virus, they can clean the document and for-

ward it on to the recipient, notify the administrator or end-user, or keep the document safely isolated for further study.

E-mail is the most popular use of the Internet and, because a lot of viruses are spread via E-mail attachments, gateway protection is a good way to ensure that strong, controlled anti-virus measures are in place rather than simply relying on end-users to scan documents. Although specific message formats such as Microsoft Exchange, or Mail

and others are supported by some vendors, the easiest way is to scan the attachments while they are still in native SMTP format and then forward them on to departmental mail servers which may be running a variety of different mail programs.

"Of course, relying on gateway anti-virus protection alone probably doesn't make sense, since you should have desktop anti-virus software in place anyway, but it can provide a strong second line of defense and reduce the reliance on one vendor for protection."

This controlled control does add some complexity to configuring the products, although they get easier to administer with every new release. To scan E-mail, for example, you need to configure port settings and IP addresses on the server, but this is fairly straightforward. To scan Web or ftp traffic is a bit more difficult since you may need to remove Internet traffic so that it first passes through the virus scanner.

There is some concern that scanning software can form a bottleneck on the network by slowing performance. This is not a

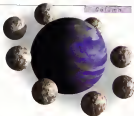
big problem for store-and-forward systems like E-mail since the additional time required to scan the attachments is not likely to be noticed by end-users, but it can affect Web and ftp traffic. Since the bulk of Web traffic is simply downloading pages there is little impact, but for large file transfers, performance could be decreased by anywhere from 10 per cent to 30 per cent depending on the exact network configuration involved.

The increased costs associated with virus infections has meant that companies are willing to pay more for protection and a mid-size-sized company might expect to pay \$25,000 or more for a gateway site license — in addition to the costs of buying a server and operating system. Controlled virus protection is relatively cost effective, however, if the alternative is buying a new set of desktop anti-virus licenses from another vendor and loading the software onto every PC. As with any anti-virus software, you should budget for maintenance and virus pattern

updates, since virus protection is a very dynamic problem.

For more information on gateway anti-virus products you can check out Trend Micro (<http://www.trendmicro.com>), McAfee (<http://www.mcafee.com>) or most leading anti-virus vendors. ☐

Sean Eltrington specializes in network security and is the western region sales systems engineer with Clavox Systems. He can be reached at (604) 737-1963 or sean@clavox.com.



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Performance Notebooks

Zippy new systems are ideal desktop replacements

by Alex Abbot, Tim Bingham-Wells and Steve Halvick

The promise of portable computers as replacements for desktop systems may have evolved into fact.

As far back as 1994, industry pundits predicted the rise of portables as potential suppliers of desktop PCs. Now, reality may be ready to catch up.

Our tests show today, it's really possible to pack a lot of power into a portable system while keeping it relatively small and light enough (relatively is the operative word), so that your customers can take the notebooks with them when they need to travel.

Such deployments are becoming necessities as corporations put more and more of their knowledge-based workforce on the road in the pursuit of interactions with customers and suppliers. We all are conducting business at some distance or another these days. Tie that in with the growing push to telecommuting, and it's clear: many users now need to have one machine that will serve multiple purposes in multiple locations.

Intel's MMX

Desktops continue to subvert notebooks by a large margin, but notebooks are in the midst of a growth spurt. Intel's escalating influence over the notebook market has spurred many major manufacturers to add notebooks to their product lines. Intel's recent introduction of the notebook version of MMX Pentium closed traditional big game that existed

between the desktop processors and their laptop versions. Actually, Intel released a 200MHz MMX Pentium processor for the desktops and a 166MHz chip for notebooks on the same day.

Grab And Go

Pentium processors, running at 166MHz to 200MHz in today's notebooks may not be fast as desktop desktops, but they make great midrange and business machines both on the road and the office. These high-end machines are expensive when compared to their desktop counterparts but packed with large active matrix color displays, CD-ROM drives, and gigabytes of storage, they provide complete and comprehensive computing power for the professional on the go.

Highly optimized notebooks packing powerful CPUs, pipelined-bus 1.2 cache, EDO main memory, and fast graphics accelerators are the essential ingredients of today's notebooks. In the lab, of all the subnotebooks, the primary functionality of the laptops was maintained. Built-in CD-ROM drives sound capabilities complemented with quality speakers and control software was quite an impressive feature, especially in Compaq's Presario 1000. Furthermore, we were especially taken by the sleek executive style of this notebook.

For many notebook owners, expandability/appropriability is always an

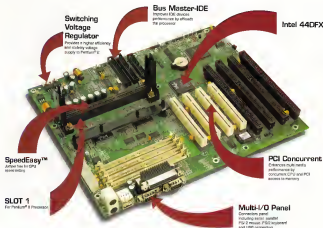
issue. Notebooks today have intuitive component integration that addresses expandability and appropriability issues. Most notebooks offer removable hard drives, CD-ROM drives, and floppy drives. Built-in modems provide instant connectivity and provide for an unused PCMCIA slot. PCMCIA slots act as perhaps the most important window to a laptop's expandability. It is through these slots that notebooks connect to SCSI devices, faster modems, network cards and RAM cards. Although most expandability and appropriability issues are being addressed, display technology remains a rigid barrier component — meaning that for the most part, your customers' best option to upgrade a screen is to buy a whole new system.

The Tests

We asked the manufacturers to send us their current "top-of-the-line" notebook. To some, this meant a 133MHz machine, while others quickly jumped at the chance to send their latest 200MHz MMX systems loaded with 64MB of RAM and convenient hard drives. Our Lab Test benchmark suite was run on each notebook computer at a resolution of 800 by 600 with a 16-bit color depth, or 65,536 colors. To minimize the possibility of system crashes and inconsistencies, each notebook's power savings features were disabled and all of the system were tested using their AC adapters.

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Angel 8888 Performer Plus

Suggested Retail Price: \$5,376

Retailer Price: \$5,343

Retailer Authorization: Yes

Support For: *Academics,*

Co-op advertising,

PDP displays.

One-year warranty includes parts and labor.

Optional three-year extended warranty.

Toll-free tech support for residents.

Demo Unit Availability: Yes

System Strengths:

"We believe our strongest point is full upgradeability including the CPU. Our units can be upgraded to 300MHz MMX with regular desktop CPUs and 2GB system RAM and hard drives are also upgradeable," says Sam Sells of Angel.

Editors' Notes

New to our Lab Test, this notebook from Angel won't do little making its presence known. With its configuration, it was the second fastest system in the survey, coming in at a score of 145 on our benchmark suite. It was configured with a 300MHz MMX processor, 64MB of RAM, a 2 GB hard drive and a 33.6Kbps fax modem. Inside the unit is an IDE CD-ROM drive and a 16-bit sound system for multimedia applications. Overall, this machine offers great performance for just under \$6,000.



June 97

Toshiba Teora 740CCT

Suggested Retail Price: \$9,269

Toshiba's View Of The Market:

"This system is a high-performance notebook targeted at customers who require a high performance desktop replacement unit," says the company.

Editors' Notes

Toshiba's new 740CCT is only one of two notebooks in this month's survey to make use of the new 43 3-inch display. The unit is powered by a 166MHz MMX processor, 350Kbps of Level-3 cache and 16MB of RAM expandable to a total of 144MB. Storage components include a removable MX CD-ROM

and floppy drive, and a 2 GB hard drive. Built into the system is a 33.6Kbps fax modem to get your customer on-line right out of the box. The 740CCT achieved a score of 123 on our benchmark suite, but had it been equipped with more RAM, that number would no doubt be higher.



Compaq Presario 1070

Suggested Retail Price: \$7,375 to \$9,290 (Armada 7700)

Retailer Authorization: Yes

Support For: *Academics,*

Retailer referrals,

PDP displays.

Three-year warranty includes parts and labor.

Toll-free tech support for residents.

Dedicated technical BBS.

Volume Discounts: Available

Demo Unit Availability: No

Compaq's View Of The Market:

"The Armada 7700 is aimed at power users needing advanced applications and desktop performance on the road and in the office," says John Chalkins, spokesman for Compaq.

Editors' Notes

If this were a competition where rewards were handed out for best looking notebook, the Presario 1070 is a no-brainer. Under its hood lies a 134MHz Pentium processor, 16MB of 8050 RAM which can be expanded to 48MB, a 1.05GB hard drive, a 10X CD-ROM and a built-in 33.6Kbps vmodem/faxmodem. One of the most

notable features of the Presario 1070 is its sound system, which Compaq has named the PremierSound Audio System. With Compaq's Phone Center, you get complete telephony at your fingertips. With all its features and good looks, we were surprised when we discovered that the machine does not have a Level-3 cache. Because of this, it achieved an overall score of 82 on our benchmark 486, much less than it would have with the aid of the much needed 350Kbps external cache. If you aren't all that bothered by this and want a machine that will keep your friends and coworkers grinning their teeth in envy, the Presario 1070 is still a great notebook. Compaq will cover you with its one year warranty on parts and carry-in labor, with the first 90 days being on-site.



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- Two DIMM sockets using SDRAM for enhanced performance
- Modem ring-in
- ATX power connector

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Intel® 430TX B-AT System Board



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- Ultra (Dual) 3.3-volt register rate up to 330MHz
- Equipped with a switching power module that supports 2.8V to 3.5V, 0.1V per step
- Two DIMM sockets using SDRAM for enhanced performance
- Modem ring-in
- ATX and AT power connectors (use ATX power supply for the ACPI function)

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Performance Notebooks



	Asus 5000 Performa Plus	Compaq Presario 1600	Dell Ultraview GPC-7550	Dell DataTron Express G4X-120	Emerson 6200T	HP DataBook 5700CTX	Hyundai 7000MX
Processor	Pentium 200 MMX	Pentium 133	Pentium 133	Pentium 133	Pentium 200 MMX	Pentium 133 MMX	Pentium 200 MMX
Cache	256Kbps	None	None	256Kbps	256Kbps	512Kbps	256Kbps
RAM (Standard/Max)	64/128	16/64	16	32	64/128	32/64	16/64
Screen	12.1 TFT	12.1 CSTN	12.1 TFT	12.1 TFT	12.1 TFT	12.1 TFT	12.1 TFT
Max. Resolution	800 x 600	800 x 600	800 x 600	800 x 600	800 x 600	800 x 600	800 x 600
Video RAM	2MB	1MB	2MB	1MB	2MB	2MB	2MB
Hard Disk	2.1GB	1.0GB	1.4GB	2.1GB	1.0GB	3.4GB	3.1GB
CD-ROM	Internal 3X	Internal 10X	Removable 8X	Removable 10X	Internal 8X	Removable 10X	Internal 10X
floppy Drive	Removable	Internal	Removable	Removable	Internal	Removable	Internal
Audio	ESS 1760	ESS 1750	Crystal 16-bit	Crystal 16-bit	ESS 1760	Crystal 16-bit	ESS 1680
PC Card Slots	2	2	2	2	2	2	2
Printing Device	Touchpad	Touchpad	Touchpad	Touchpad	Touchpad	Touchpad	Touchpad
Dimensions (WxDxH)	11.8 x 5.8 x 2.1	12 x 5.5 x 1.9	11.7 x 5.6 x 1.9	11.75 x 5.2 x 1.5	11.8 x 5.2 x 2.1	11.7 x 5.2 x 2.2	11.7 x 5.2 x 2.2
Price (List/Est)	315	417	312	315	379	319	275
Weight (Lb/Kg)	7.7 (3.5)	6.7 (3.1)	6.6 (3.0)	7.0 (3.2)	6.14 (2.8)	7.1 (3.2)	7.7 (3.5)
Battery Type	NiMH	Lithium Ion	NiMH	NiMH	NiMH	Lithium Ion	NiMH
Operating System	Windows 95	Windows 95	Windows 95	Windows 95	Windows 95	Windows 95	Windows 95
IR Port	Yes	No	Yes	Yes	Yes	Yes	Yes
Scans	Video to-TV port 32 Kbps modem	32 Kbps modem			Video to-TV port		IS modem
Windows Benchmarks							
Desktop Publishing	144	58	22	85	122	118	85
Desktop Graphics	124	180	122	170	145	200	128
Desktop Presentation	147	58	28	82	122	120	107
Word Processing	145	55	21	87	122	125	102
Spreadsheet	122	72	34	87	141	144	102
Database	124	55	61	26	101	122	75
Overall SystemCS	145	62	27	82	121	120	102
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Internet Contact	www.asus.computer.com	www.compaq.com	www.dell.com	www.dell.com	www.emerson.ca	www.hp.com	www.hyundai.com
Suggested Retail Price	\$2,799	\$1,229	\$2,179	\$2,199	\$2,700	\$2,149	\$2,629
Street Price	N/A		\$2,349	\$1,509			\$2,599
Retailer Price	\$2,249		N/A	N/A			\$2,274
Warranty	1 year	3 years	3 years	1 year	1 year	3 years	3 years
For benchmark figures where numbers are measured in ms, the lower numbers represent better scores. Figures where numbers are measured in KB or MB/sec, the higher numbers represent better scores. All prices shown are average street prices in Canadian dollars, unless otherwise indicated.							

LAB TEST



Ingulph Powerlite 8000	30 June 07 Micro IPC N52000	MobiTech Jetbook 3000	Edge Wholesale RTX 880	June 07 MCC Verso 620MX	Panasonic CF-62	Yoshida Tecra 740CDT	Ultimet
Processor 195 MMX 2500ops 3344 12.1 TFT 680 x 680 2MB 2.1GB Internal 1GB Internal ES2 1600 2 Touchpad 11.7 x 12.5 x 1.4 2.3 6.4 (20) Lithium Ion Windows 98 Yes Internal 20.8 modem Video-to-TV port	Processor 386 2500ops 3344 10.4 TFT 680 x 680 2MB 1.0GB Internal 512 Internal ES2 1700 2 Touchpad 11.9 x 13.2 x 2.2 2.4 6.1 (21) NiMH Windows 98 Yes Internal 20.8 modem	Processor 220 MMX 2500ops 6004 12.1 TFT 680 x 680 2MB 3.1GB Removable 1GB Removable/External ES2 1010 2 Touchpad 10.9 x 11.6 x 2.0 2.2 6.5 (22) NiMH Windows 98 Yes Internal 20.8 modem	Processor 133 2500ops 6000 12.1 TFT 680 x 680 1MB 1.3GB Removable 512 Removable Crystal 70-60 2 Touchpad 11.75 x 12.6 x 1.8 2.6 6.4 (23) NiMH Windows 98 Yes Internal 20.8 modem	Processor 195 MMX 2500ops 33120 12.1 TFT 1,024 x 600 2MB 2.1GB Removable 1GB Removable ES2 1670 2 Touchpad 11.44 x 12.75 x 2.1 2.5 6.1 (23) Lithium Ion Windows 95 Yes Internal 20.8 modem	Processor 133 2500ops 6070 12.1 TFT 1,024 x 600 2MB 1.3GB Internal 62/60 Internal ES2 1640 2 Touchpad 11.6 x 12.6 x 2.4 2.6 7.1 (24) NiMH Windows 98 Yes Internal 20.8 modem Built-in microphone	Processor 195 MMX 2500ops 6070 12.1 TFT 1,024 x 600 2MB 2.1GB Removable 1GB Removable ES Pro Complete ES2 1690 2 Touchpad 11.6 x 12.1 x 2.2 2.75 6.2 (24) Lithium Ion Windows 95 Yes Internal 20.8 modem Built-in microphone	Processor 195 2500ops 3322 12.1 TFT 680 x 680 2MB 3GB Internal 62 Removable ES2 1690 2 Touchpad 11.6 x 11.1 x 2.0 2.75 7.6 (25) NiMH Windows 95 No 32.5 PCMCIA Video-to-TV port
80	120	70	82	127	71	100	87
100	162	145	135	208	140	172	143
120	170	200	180	162	44	100	175
117	104	195	180	132	75	188	81
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Impulse

Suggested Retail Price: \$6,449**Street Price:** \$3,999**Support For Resellers**

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POP displays

Three-year warranty. First year includes parts and labor.

24/7 live tech support for resellers

Demo Unit Availability And Restrictions

Discount priced units are available from IBM, Merrell and Superson

Impulse's View Of The Market

"Our target market is small- to mid-sized corporate, presentation and desktop replacement," says Peter Bright of Impulse. "We position our product through an all-in-one format, with prices lower than the prices from the top four vendors."

Editor's Note

The PowerLite 6000 is equipped with a 666MHz MMX processor, 32MB of RAM and a 3.1GB hard drive. Both the 10X CD-ROM and floppy drives in this unit are internal, saving the user from having to swap back and forth between the two. The PowerLite 6000 makes use of the EISA 1888 chipset, capable of delivering 16-bit digital and 3D surround sound for multimedia applications. Priced at just under \$6,000, this machine comes with a three-year "4-Care" limited warranty.



Hewlett-Packard OmniBook 5700CTX

Suggested Retail Price: \$8,046**Reseller Authorization:** Yes**Support For Resellers**

Co-op advertising

Reseller referrals

POP displays

Three-year warranty includes parts and labor

Demo Unit Availability

The HP demo pool is available for established channel partners

HP's View Of The Market

"Over the next few years much of the corporate desktop market will switch to notebooks. HP is positioning its notebooks to take advantage of this shift. One of the major concerns for corporate purchasers is manageability — a feature HP has integrated into its corporate notebooks," said Danny Servad of HP.

Editor's Note

The new 5700CTX uses a more common casing found on many

other notebooks, rather than the ultra-slim design found on the OmniBook

5600CT, which we

reviewed in January.

One of the pop-out

mouse flaps by

many on the old

design. And the 10.4-

inch display has now

been replaced by a large-

or 12.1-inch model. Our

test unit came equipped

with a Pentium 166MHz

processor, 32MB of Level-2

cache, 32MB of RAM

expandable to

64MB, a large 3GB

hard drive and a 10X

CD-ROM. The

5700CTX has a suggested list price of \$8,046 and comes with a

standard three-year parts and labor warranty.



Pentacore CF-62

Suggested Retail Price: \$8,130**Street Price:** \$7,000**Support For Resellers**

Co-op advertising

Reseller referrals

POP displays

Three-year warranty includes parts and labor

24/7 live tech support for resellers

Dedicated technical BBS

Demo Unit Availability And Restrictions

Demo units are usually reserved for corporate sales opportunities

System Strengths

"Pentacore offers durability and quality (with a magnesium alloy top cover). It is the only notebook with a PD/CD drive and large battery capacity. It's MPEG-1 capable via a cartridge on the ZV card," according to company spokesperson Anissa Khan.

Editor's Note

Equipped with a 133MHz

processor, 16MB of RAM

and 1.3GB hard drive, the

CF-62 delivers plenty of

power for the road.

The combination PD/CD

drive offers CD-ROM

reading at 4X speeds, and

rewritable capabilities

with its PD (phase change)

technology. A standard PD

disc can hold 650MB of infor-

mation, identical to a CD, but it's

rewritable. The sharp 12.1-inch TFT

screen is capable of delivering sharp text and graphics at up to

1,024x384 pixels in 16-bit color. The machine is priced around the

\$7,000 mark and comes with a three-year warranty.



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Reseller Authorization: No

Support For Resellers:

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Reseller referrals

POP displays

Three-year warranty includes parts and labor

Demo Unit Availability And Restrictions:

One unit per store, with discount available if used for demonstration purposes. The unit has to be in-store for four weeks.

System Strengths: "We feature a built-in CD-ROM floppy drive and battery, an infrared mouse, and a whole-you-want service center," says the company.

Editors' Note:

Perhaps the most "loaded" machine in the lab test, the Hyperdate Hyperbook 7566X brings all the components—normally found in high-end desktop machines. The unit we tested was configured with a 200MHz MMX processor, 64MB of RAM, a 18X CD-ROM and a huge 3.1GB hard drive.

If you've got a power-hungry user looking for the ultimate in portable power, this notebook should easily fit the bill.



Serviceworks DataTrain Express DEX-120

Suggested Retail Price: \$5,999

Street Price: \$4,500

Reseller Authorization: Yes

Support For Resellers:

Co-op advertising

Reseller referrals

POP displays

Three-year warranty (The first year warranty includes parts and labor. The balance is parts only.)

Volume Discounts: Yes

Demo Unit Availability And Restrictions:

Units are available, but must not be sold for forty-five days.

System Strengths:

"Custom configuration. The dealer can select the size of the hard drive and the speed of the processor. You are able to sell what the customer needs," said Michael Wollman of Serviceworks.

Editors' Notes:

Distributed by Serviceworks, DataTrain systems are well known to us for their desktop line of computers. This month, we had the chance to review a DataTrain notebook, the DEX-120. This unit was configured with a 150MHz processor with 32MB of RAM and a 3.1GB hard drive. The display is a standard 12.1-inch TFT with a maximum resolution of 800 by 600.

Also, the 150MHz processor may be ideal for someone looking to buy a machine with enough processing power to get most applications running adequately, without having to spend more money on 160MHz or 200MHz processors.



MobileTech JetBook

Suggested Retail Price: \$6,100

Reseller Price: \$4,000-\$5,800 depending on volume and configuration.

Reseller Authorization: Yes

Support For Resellers:

Co-op advertising

Reseller referrals

Limited three-year warranty, (one year parts, three years labor)

Toll-free tech support for resellers

Volume Discounts: Yes

Demo Unit Availability And Restrictions:

The demo unit requires a payment upfront, which is refunded when the unit is returned. Demo units can be held (generally) for one week.

MobileTech's View Of The Market:

"We do well in the high end where personal service and aggressive pricing are key strengths," says Alan Kawa of MobileTech.

Editors' Notes:

The Jetbook 7000 configuration resembled that of some of its competitors which feature fast processors and plenty of installed RAM. The Jetbook 7000 is powered by a Pentium 200 MMX processor and is equipped with 64MB of RAM. With a 2.1GB hard drive and 10X CD-ROM, the machine easily qualifies as a desktop replacement notebook, bearing plenty of processing power, RAM and storage space. As far as performance goes, the machine achieved a score of 899 on our benchmark suite.



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Darwin CPC-1550**Suggested Retail Price:** \$3,325**Street Price:** \$3,149**Support For Resellers:**

Marketing broch.

Reseller referrals

PCP displays

Three-year warranty, includes parts and labor

Does It Affect Availability And Restrictions:

Key resellers are eligible for demo units. Short-term leases may be arranged for other resellers

System's Strengths:

"We offer excellent system configurations versus price, (with us) emphasis is on cost-of-use," says Patricia Andriola of Combronic Models featuring 850MHz MMX and 166MHz MMX processors

will be introduced in May

Editors' Notes:

Another new entry into our lab is this model CPC-1550 from Darwin. The machine consists of a 133MHz processor, 16MB of RAM and a 1.44GB hard drive. Weighing in at just over five pounds makes this notebook the lightest in this month's survey. Priced at just over \$3,000, this machine offers both good value and portability.

**Eurocom 6300T****Suggested Retail Price:** \$3,300**Street Price:** \$3,150**Reseller Price:** \$4,630**Reseller Authorization Note:**

Co-op advertising

Reseller referrals

One-year warranty, includes parts and labor

Dedicated technical DBS

Volume Discounts: Yes**Does It Affect Availability And Restrictions:** There must be 60 days before resale**Eurocom's View Of The Market:**

"We position our product as a 'true' desktop replacement notebook computer. The notebook market is expanding rapidly and because our notebooks are modular and 'desktop-upgradeable,' have concurrent operation of CD-ROM, floppy and hard drive, and customized configurations our notebooks are more valuable

and have a larger practical life," says Alan Band of Eurocom.

Editors' Notes:

Eurocom has recently made the headlines by being one of the very first manufacturers to put out a notebook, which uses Intel's 300MHz processor. For a notebook to replace the desktop computer, see the 6300T. The unit consists of a 300MHz MMX processor, 32MB of Level2 cache, 64MB of RAM, a 3GB hard drive and both an internal SX CD-ROM and floppy drive. On the back of the unit, you'll also find an RCA video-to-TV port, perfect for playing games on a TV or to make presentations all that much easier to see. As can be expected from a machine with such a configuration, the 6300T scored very well on our benchmark suite.

**NEC Versa 6300MX****Suggested Retail Price:** \$4,309**Support For Resellers:**

Co-op advertising

Reseller referrals

Three-year warranty includes parts and labor

Toll-free tech support for resellers

Dedicated technical DBS

Volume Discounts: Yes**Does It Affect Availability And Restrictions:**

One unit per reseller location

NEC's View Of The Market:

"The Versa 6300 is a true desktop replacement notebook PC with outstanding performance and features such as 13.3-inch screen, MMX processor and dual battery capabilities. The system is geared towards the mobile professional," according to a company spokesperson.

Editors' Notes:

Equipped with a 166MHz MMX processor, 32MB of RAM and a 2.0GB hard drive, the Versa 6300MX managed to outperform all of its competitors, even those machines equipped with 300MHz processors. It achieved a final score of 146 on our benchmark suite. The 6300MX uses the latest in display technology, with its 13.3-inch active matrix TFT screen, easily comparable to most 15-inch desktop monitors. With a maximum resolution of 1,024 by 768 pixels, you get 64 per cent more pixels on the screen than you would at a resolution of 800x600.



Edge Wholesale RTX 880**Suggested Retail Price:** \$4,760**Street Price:** \$3,690**Reseller Price:** \$3,290**Support For Resellers:**

Co-op advertising

Reseller referrals

Two-year warranty includes parts and labor

Volume Discounts: Yes**Demo Unit Availability:** Yes**System Strengths**

"We offer worldwide support and service, large screens with good color, light-weight and affordable workmedia systems," says the company.

Editors' Notes

The RTX 880 consists of a 133MHz processor, 40MB of RAM which can be expanded to 80MB, a 1.3GB hard drive and a removable 6X CD-ROM. RTX notebooks and desktop systems are distributed worldwide by Edge Wholesale. This is one of few machines in this category to come in at around the \$4,000 mark.

3D Microcomputers IPC NB2000**Suggested Retail Price:** \$2,899**Reseller Price:** \$2,750**Reseller Authorization:** Yes**Support For Resellers:**

Co-op advertising

Reseller referrals

POP displays

Two-year warranty includes parts and labor

Dedicated technical R&S

Demo Unit Availability: Yes**IPC's View Of The Market**

"We market this as our high-end notebook," says John Fines of IPC. "We offer great quality for a reasonably competitive price."

Editors' Notes

The latest in the IPC line of notebooks is the NB2000. Our evaluation unit was equipped with a 300MHz processor, 32MB of RAM and a 1.0GB hard drive. Both the 6X CD-ROM and floppy drives are internal on this machine. Although the machine uses a smaller 10.4-inch display, it still has an attractive price tag coming in at just under \$3,000.

June 97

Ultimat**Suggested Retail Price:** \$5,130**Street Price:** \$4,420**Reseller Price:** \$4,193**Reseller Authorization:** Yes**Maintenance And Technical Relationship With Resellers:**

One-year warranty includes parts and labor

Toll-free tech support for resellers

Desktop-specific space on Web site

Demo Unit Availability And Restrictions:

Demo units are available with a one-week return policy

Ultimat's View Of The Market

According to a company spokesperson: "Ultimat focuses high growth in notebooks. Ultimat's product is a very competitive notebook with high end features."

Editors' Notes

This month, Ultimat sent us the only notebook computer with a non-MMX 166MHz processor. This model was equipped with 32MB of RAM, expandable to 72MB, a 3GB hard drive and an internal 6X CD-ROM. Also included with this machine is a 13.6KHz PCMCIA fax modem and video-TV port found on the back of the unit. Priced at just over \$4,000 and backed by a one-year warranty, this machine offers good performance at a competitive price.

**Performance**

As always, our performance award goes to the fastest system. This month, to our surprise, the fastest system was not a 300MHz MMX system, but NEC's Versa 6200MX with a 166MHz MMX processor. This machine managed to outperform all of its competitors with an overall score of 146 on our benchmarks, thanks to its excellent design and engineering.

Price/Performance

Without a doubt, this month's award for the highest performance at the lowest price goes to IPC's NB2000 notebook. The machine has everything you need for working on the go, at an amazingly low price.

Demo!

Our award for best overall notebook this month goes to one of our newcomers, the Angel 3600 Performer Plus. This machine came over-on-line to matching NEC's Versa 6200MX for first place in the performance category. The 3600 Performer Plus is a real performer, equipped with all the bells and whistles. And at under \$6,000, it offers excellent performance at a competitive price. **DE**

Steve Malachuk, Tim Bingham, Phila and Jan Shaw are CCA's Lab Test Editors. They can be reached at (416) 293-8800.

Massive Tsunami wave hits Pentium IIs And Portables

by Geoffrey Saperstein



For Pentium II PCs, portables, or anything else you are selling, you need to bring the latest info to be able to earn the business of the not-so-very customers.

For example, will the inevitable headlines warning about the just-revealed floating-point bug in the Intel Pentium II (you know, the one that affects a measly 140 trillion or so possible numerical results) affect its success in the market-place? Probably not as much as its benchmark performance compared to an AMD K6 does. And nobody wants to bet on the wrong horse. What about Single Edge Connect (SEC)? Accelerated Graphics Port (AGP)? Your better-informed customers were wondering about these issues even before Intel's marketing team got up for its monthly round of CPU wars.

No matter which side of the battlefield you're on, to arm yourself, I'd recommend checking out the latest info about the bug at <http://www.ssk.org>. Intel's response at <http://www.intel.com/technology/float/>, or the benchmarks at <http://www.fpu.com/>. (This "fpu" bug also affects the Pentium Pro, as well.) Frankly, I think the FPU bug will have an insignificant impact on the marketability of the new chips, and will very likely receive a great deal less negative press than the much-hyped bug in the original Pentium did. After all, that bug produced results that were much more troubling and Intel was then put to a repeat of open-denoing.

There's a very real chance the market will perceive Intel's move away from the Socket 7 to the SEC connector as more of a marketing play than a technological advance. It, however, likely does what it has done so often in the past and moves quickly to exceed the performance of its competitors, then we are likely to see a repeat of the company's '85-'86 performance. Frequently Intel has done an end-run around its competitors by moving quickly to address the issues that the others sought to capitalize upon. Recall the

486SX. Complaints that it was deliberately crippled were probably justified, but when the DX chips and OverDrive strategy fell into place so quickly, the complaints couldn't be heard over the din of the cash registers. Similarly, all those shareholder lawsuits over the original Pentium bug had to be dropped when Intel's stock went up 1% in the aftermath of the debacle.

Next came the fears that the CISC architecture was reaching the end of its performance possibilities. This, as you may recall, was the rallying cry of the PowerPC party. In fact, the PowerPC has not performed as well as early predictions had held, while the Pentium and its successors have outperformed early expectations. Consideration of MMX (multimedia-compatibility) of motherboards fell like paper when the MMX OverDrive quickly addressed the issue. But, despite Intel's FUD marketing prowess, AMD's K6 is a threat in its side.

I see increasing marketability at the K6 on the desktop in the near term. The market has not yet given tired of high-performance desktop PCs and the K6, in a word, rocks. And the latest Alpha and PowerPC chips are going against their share of powermonkeys, too. But whether it's an Intel, AMD, Alpha or PowerPC chip in the next processor tower on Joe Programmer's desktop, there are plenty of indications to suggest that things are just getting rolling. The growth in the PC's credibility — and the Mac's continued strength — as a prototyping and production graphics platform, reinforced by the announcements and product releases at the recent Siggraph publishing conference in NYC, makes even greater growth in the high end a very strong likelihood. I expect industrial-strength production tools like Adobe Illustrator 7, After Effects and QuarkXpress 4 to be strong sellers on the PC, as they have been over the last few years on the Mac. 3D Studio Max, Lightwave 3 and Softimage are already serving the high-end 3D graphics market's idea of what a PC can do on its own.

When NT 5 is released and gains credibility as a robust production platform — as it likely will — I expect the DTP, 3D and digital

video market opportunities on the PC to blossom as they never have before.

Let's say that everyone who wants a PC already has one or is going to wait for the 1998 models. Another area I see a huge potential in is the portable market. I'm particularly pumped on the possibility that lightweight notebooks will finally make a decent showing.

People are paranoid. Do you have your \$3,000 notebook in the car when you park it? I sure don't, after leaving one too many times of break-in thefts. A growing number of professionals rely on that data to the level that they are not going to leave it in the car, at the table when they get up for a coffee refill, nor are they going to leave it in the conference room when they go out for a break. The need for — or at least your ability to sell in the perception of — portability grows stronger in a paranoid society. Security issues are strong motivators.

Do portables need to have CD-ROMs, floppy, 13-inch screens and the other goodies that we do regard as today's big fat multimedia portables? For some, yes, others will favor portability, desktop connectivity and battery life more than multimedia goodies. Personally, no! I continue to see customers willing to pay a premium for both extremes. I personally want to carry a PC that resembles a Toshiba Libretto — a 12.5-inch Pentium portable with a decent keyboard and an active-matrix screen. I see a lot of increased customers around the portable PC sectors of all the vendors I saw. I see the mainstream user who already has a desktop computer will make his (or her) next contracting business case for a portable.

I see the sales professionals looking for a portable as a solution for the too-crowded desk, and teleworkers looking for a strong manageable replacement for the old desktop PC. This trend is already in full force in Japan. Take a massive tsunami wave, it's due to hit these shores any time now. ☐

Geoffrey Saperstein is Managing Editor at The Computer Paper, and is a former computer journalist based in Vancouver. He can be reached at gsaper@comp.ca



The Rules Of The Litigation Game

by Douglas Gray



You have undoubtedly heard of the litigation process, referred to as a game. That refers to the strategic tactics, moves, plays and leads that are involved in the process. As in any game, and litigation is inherently an adversarial process, if you don't know how to play it well, or retain a lawyer who does, the odds of "winning" are not in your favor.

At some point in your business career, it is very likely that either you will be suing someone or someone will be suing you. Litigation normally has a reputation to many people, and the process can be very frustrating, intimidating, stressful, uncertain and expensive. However, by avoiding the classic mistakes that many business owners make, you will be better able to deal with the litigation process from a position of perspective and insight.

Lawsuit Based On Emotion?

You might feel that you have been wronged for whatever reason and you are naturally very upset. Your decision to sue though, should be based on hard-based business analysis.

Unrealistic Expectations?

Many people assume that they are in the right and that they will "win" at the end of the day. However, the interpretation of the facts can vary and very few issues in law are black and white. The litigation process is inherently unpredictable. In addition, when you factor in your legal fees from any judgement in your favor, maybe you are not ahead of the game at all.

Assessing The Defendants Assets

"You could "win" at trial, but still be a big time loser. The reason is that the personal or corporate defendants could have no assets in their name or have all their assets leveraged up with debt at the time you commence an action or by the time you get a judgement.

Doing an objective risk assessment of the realistic potential of collecting on a judgement at the outset is key. You could be throwing good money after bad. You might conclude that the negative learning experience was a cost of business insight not use, and commit to changing your business policies and practices to pre-empt a recurrence.

Weigh Potential Gains Versus Losses

You need to realistically assess the relative pros and cons of litigation. In other words, examine the costs in money and lost productivity. Can you afford the fight to the end? Have you obtained various quotes in writing as to the cost of complete pre-trial and trial process? Is the cost to pursue the matter going to be a lot more than the amount you are claiming? What if you lose? In the latter case, you will be left not only legal fees, but court costs as well. What if the defendant counterclaims against you and wins?

Considering A Settlement

Settlements save a lot of court time. You have heard of people settling the case on the court house steps? The reason is the uncertainty of the trial process outcome. Settling for 25-30, 50 or 70 per cent of the original claim is better than the risk of getting nothing and being out legal fees as well.

Get Expert Legal Advice

You want to have a Lawyer experienced in litigation matters, review your case. Better still, have a minimum of three lawyers give you candid and objective feedback on your chances at trial, how long it will take and how much it will cost. You need a benchmark for comparison.

Before you decide on any lawyers consider each of the above points and then sleep on it for a few weeks or months. See if you have the same opinion at the end of that time. Remember that ancient, "act in haste, repent at leisure." ®

Douglas Gray, LL.B., has had extensive experience as a lawyer specializing in small business. He is also a speaker and author of 12 best-selling business books, as well as an on-demand software program. His books include *The Complete Canadian Small Business Guide* and *Reining Money* (both published by *McGraw Hill Ryerson*) and *Start and Run a Profitable Consulting Business and Marketing your Product* (both published by *Self-Counsel Press*).

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Microsoft, Intel fight Network Computer

The industry giants have aligned to make PCs cheaper and easier to use — sometimes.

by Alan Zisman



Do you know how much a PC really costs?

No, not the purchase price, that's too easy. How much has it cost *after* the purchase?

Consider not only the cost of buying and updating

software and hardware devices, but the cost in listening to user it, and lost productivity constantly fiddling with it.

Inevitably, estimates vary widely, but some estimates put the Total Cost of Ownership (how far another three letter acronym — TCO) as high as \$40,000 over the five-year useful life of a \$3,000 PC. Some experts suggest that these figures are exaggerated. If employees weren't fiddling with their screenavers — would they be doing productive work or just hanging around at the water cooler?

One response to these figures has been the Network Computer. First proposed by Oracle Software's Larry Ellison, the NC is a small, cheap computer lacking any hard drive or floppy drives — it would get all its software across a network. As such, upgrading the software on the network would upgrade all these network terminals. Critics have suggested that this would simply move costs from the individual companies to the network, and its server, and that the real motivation behind the NC is to get away from a perceived singlehandedness on the computing industry by "Wintel" — Microsoft Windows software running on computers with Intel processors.

Microsoft and Intel have felt a need to respond to the Network Computer initiatives. They're proposing a number of new standards, designed to allow users to continue to use Windows/Intel computers and software, while simplifying the machines and their administration, to reduce overall costs.

The first of these is the so-called Network PC — a three letter acronym, NPC, not to be confused with NC. In essence, a Net PC is a standard PC, complete with hard drive, connect-

ed to a network. The NPC side suggests that even if users are running software and storing their data across the network — that a local hard drive is still a useful accessory, as it allows disk caching, reducing calls to the network and increases performance. So far, it simply sounds like a standard PC with an Ethernet card.

In order to reduce costs, however, the NPC would be slotted. As with many new PCs, standard input and output ports would be built into the motherboard. Unlike these PCs, however, there would be no expansion slots — no reason to open the box. There would be no fanning with switches or IRQ numbers, and no problems with Plug and Play that, well — doesn't. The standard calls for a Universal Serial Bus port, allowing for some expansion using USB devices, but otherwise, no choice for the user to upgrade, break, or waste time adding to their system.

The next proposal is OnView — a plan to eliminate the typical moment or two of bootup. Like many of today's notebooks, an OnView computer need not be shut down. Instead, it would be put into a suspended mode, waiting for a keyboard or mouse movement to awaken.

Also aimed at the network administrator is the Zero Administration Initiative. Full of noble money-saving intentions, it proposes a PC where operating systems can be automatically updated across the network, without user involvement, and software applications can be automatically installed or updated as needed. This means, for example, if a user who doesn't have Microsoft Word installed used to open a DOC Word file, the system will automatically request by installing Word across the network.

An extension of Plug and Play would install and update hardware drivers is needed, again automatically. Extensive network management tools would make it simpler to administer multiple clients from a single server. To help jumpstart all these various and developing specifications, Microsoft and Intel released an outline of their model of the near-



future at the April WinHEC — the draft PC98 design guide. In it, we find a vision of next year's Basic PC — a 200MHz MMX Pentium with 32MB of RAM, a USB port, OnNow power management, and no ISA bus.

Intel and Microsoft recognize that many manufacturers will continue to include the so-called industry Standard Bus, which first appeared on IBM's 286-powered AT models in 1984. They strongly want to encourage the industry to finally dump ISA, feeling that this is the major obstacle holding back successful Plug and Play. Instead, they want vendors to focus on the PCI bus, along with USB and Firewire (a.k.a. 1394) as the methods for expanding their hardware.

The draft PC98 document also describes a basic portable specification — a 160MHz MMX Pentium, with advanced power management, a standardized docking station, and again, a USB port. Specifications of four levels of servers are being released in a separate document.

For information on these visions of the near future, check out <http://www.microsoft.com/winhe98/>, combined!

In this column, we've been looking at a series of changes to the design of PCs, many of which, such as MMX processors, Universal Serial Bus, and Firewire, are part of the plans Microsoft and Intel are spelling out in the PC98 proposals. When I started this series, I proclaimed we'd be seeing these changes this year. Except for Intel's MMX processors however, it's going to take longer than that before many of these improvements have any real impact on the market.

Next month, we're going to look at the reasons for the holdup — why it's taking longer than expected to see products from DVD drives to USB on our desks and in our stores. ■

Alan Zisman is a computer journalist and teacher living in Haverhill. He can be reached at alan@worldnet.att.net



Piracy rates have surged in Singapore, Hong Kong

It's almost back to square one for software industry watchdog Business Software Alliance (BSA) in Asia, including Singapore and Hong Kong, with piracy levels during 1996 proving cause for despair and bringing to naught all efforts to keep the crime under check.

According to a BSA survey, the piracy rate in Singapore surged from 53 per cent in 1995 to 59 per cent in 1996. This is deemed a setback as Singapore was seen as a country that was responding to campaigns promoting

the use of genuine software. In fact, 1995 figures indicated the piracy rate in Singapore had declined by eight per cent.

"These figures suggest that more than half of the software used on PCs in Singapore was unlicensed. This is worrying," said Stuart Ong, BSA vice-president.

Hong Kong is seen as a major channel for illegal CD-ROMs into the region. The rate there for 1996 has been pegged at 64 per cent, against 62 per cent the previous year, with Malaysia seeing a rise from 77 to 80 per cent. There was no improvement in China, which stayed level at a whopping 96 per cent.

Changing news comes from Australia, which continued to maintain its position as the country with the lowest piracy rate, dipping from 35 per cent to 32 per cent. New Zealand and Japan also saw declines, from 40 per cent and 35 per cent to 33 per cent and 41 per cent respectively.

Thailand (80 per cent), Korea (79 per cent) and Taiwan (66 per cent) also reported lower rates from the previous year. Also, worldwide losses fell from US\$13.3 billion in 1995 to US\$11.2 billion in 1996. Asia-Pacific accounted for US\$3.7 billion in losses.

Toshiba upgrades DVD player

Toshiba Corp. has announced a new DVD-Video player, its first since it launched the DVD-Video system in November 1996 and the first second-generation machine of any manufacturer.

The new player offers even an even clearer or picture and better sound for those with a stereo television set through the use of technology from Spatializer Audio Laboratories Inc.

Toshiba spokesperson Kenzo Okumura said, "The new encoder-IC enhances the clarity of the video image by reducing the noise level." The company has improved video by using a 10-bit video digital to analog (D/A) converter to process the eight-bit video information, ensuring losses are at a minimum. The new video encoder IC is used for the high signal to noise ratio of 75dB and the wide frequency response of up to 6MHz ensure better images and color.

In addition to DVD-Video disks—the player will also accept audio CDs and video CDs thanks to the use of a dual-laser pickup.

The Toshiba SD-K7103 will be available in Japan from June 1 and carries a list price of US\$740.

Yamaha announces new CD-R drive

Yamaha Corp. has announced a new CD Recordable (CD-R) drive that will go on sale in Japan this month. The drive will write at double speed and use playback discs at up to six-times standard speed.

CD-R is a write-once version of the Compact Disc system widely used for limited distribution of large amounts of data and pre-release versions of software. The drive has a 1MB data buffer, has a 4.2MB/sec burst data transfer rate and transmission rate of 9000bps in GX mode.

The drive is available in internal (CDR2000) or external (CDR2000e) versions and carries a list price of US\$610 and US\$715 respectively. It will be available from June 21 in Japan.

Pioneer announces first DVD car navigation system

There is no doubt that many cars in Japan are high-tech, with entertainment systems that rival many living rooms, and now Pioneer Electronic Corp. has announced the DVD system will soon take its place alongside the television, videos, CD players and MD players that adorn many dashboards in the nation's cars. The DVD system won't be used to entertain passengers though, the company has integrated a DVD-ROM player with a car navigation system.

It comes as no surprise that, just six months after DVD-Video players first launched, the system is already making its way into car navigation units. The great advantage of DVD, of course, is its capacity. A single video disc, for instance, can hold a Compact Disc ten fold a 7GB of data, or more than seven times the capacity a CD-ROM can.

Car navigation systems work by interacting with Global Positioning Systems. The new Pioneer system will be on the market this month. It is available in two models, the DP90 (US\$1,890) or DP070 (US\$1,575), and each features a large eight-inch screen liquid crystal display monitor, DVD-ROM player and other optional units. The two computers are powered by a 30-bit RISC (reduced instruction set) microprocessor.

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Visual Basic 5 Interactive Course Is Best Of Breed

by Stephen Barak



Microsoft's recently released Visual Basic 5 is the hot ticket for programmers, and "Visual Basic 5, Interactive Course" is the ideal guide for consultants, resellers, and developers interested in moving to this visual design environment. There is a plethora of Visual Basic books, such as the "Gateway" and "From Scratch" series, but this book is the best of the new breed.

As included CD-ROM contains all the source code as well as a selection of controls, and features Explains for Windows 3.x, 95 and NT. Most of the controls are proprietary versions of the products, but they do give a

good feel for the possibilities. I had difficulty getting the programs off the CD due to some corruption, but I am assuming that the problem is unique to my source copy.

The complete text is on-line. Visual Basic on-line experts personally answer questions. And if your customers need the free exchange of ideas with fellow students, they can join a virtual community, share the latest information, and obtain the latest tips, read the up-to-the-minute FAQs and the course newsletter. Users looking to check their progress can take on-line quizzes and exams to get immediate feedback. In addition, they can receive continuing education credits (CEUs) from Marquette University and download a certificate of achievement.

The content of the book will appeal to both new and professional programmers. The coverage is superior to others that I have reviewed and builds a comprehensive foundation. Visual Basic 5 Interactive Course offers a unique hands-on approach to learning, with its easily digestible lessons, on-line capabilities, and object-oriented learning.

Tutorial is nature, each chapter breaks into smaller sections that cover one major topic. Exercises and a quiz complete each session providing excellent reinforcement. Its attempt to make the language less intimidating, the early sections are quick and easily mastered with lessons increasing in complexity as the reader progresses. Your customers can complete each one of the 132 sessions in less than 60 minutes. As interesting and unique

Title: Visual Basic 5 Interactive Course

Price: \$20.95

Publisher: Wade Group Press

Authors: John Harrington, Mark Sparks,

Heidi Brambaugh, Cliff Diamond

Level: Beginner to Intermediate

Content: 104 pages, plus CD-ROM

Rating: A+ — Highly recommended

ISBN: 1-87165-873-8

dialog amongst facilitator, programmer, provides answers — very effective, and innovative. They help to illustrate essential points and answer questions. Any reader will react favorably to this book, since it heightens interest. This is a rare attribute in programming books with substantive content.

In summary, Visual Basic 5 Interactive Course is perfect for those who want an in-depth introduction to Visual Basic 5 programming. The book includes many sample programs, which could form the core for much more complex offerings. As an added bonus, the coverage goes way beyond the standard for introductory books. I highly recommend this Visual Basic offering for both new and experienced programmers in your customer base, and as a valued addition to any reader's bookshelf. □

Stephen Barak, ASP, is a learning writer and editor and co-conceptor for the BAISSE Computing Program at Capilano College. He is Microsoft Certified, and can be reached at stbarak@capilano.bc.ca.

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new PRODUCTS

Ink-jet printer wars continue

Competition in the already hotly contested inkjet printer market heated up further in late May, with the announcement of two new six-color inkjet models: the Epson Photo Stylus and the Lexmark 7000.

The Photo Stylus becomes the latest in the popular Stylus line of color printers, aimed at a fairly specialized market for "true" photo-realistic color printing. The Photo Stylus offers 1,440 dots per inch, nearly continuous tone image output on special coated stock. The Photo Stylus incorporates a wide array of Epson's latest printing technology: Micro Piezo Head, a six-color cartridge, AcutePhoto Halftoning, Super Micro Dot technology,

and specially formulated QuickDry inks. With a probable street price of about \$699, including a Digital Darkroom software bundle, the Photo Stylus is a strong contender for the attention of the serious PC or Mac graph-ics user.

Simultaneously, Lexmark unveiled the Lexmark 7000, a 1,200 dpi color printer that has a feature set and technology innovations set that closely parallel that of the Epson Photo Stylus, for a Canadian street price of about \$399. The Lexmark 7000 is intended to provide superior black-and-white text output (the closest to true 600 dpi laser quality that we have seen from an inkjet so far), as well as "photo quality" images.

It remains to be seen if the other main players in the ink-jet printer field, Canon and Hewlett-Packard, have similar ultra-high resolution printers up their sleeves. It is hard to imagine the price performance of these two new models being beaten anytime soon — the challenge will be for their competitors to match what Epson and Lexmark have sprung on the market this spring.

For more information, go visit <http://www.epson.com> or call 1-800-463-7766.



Lexmark 7000 Inkjet Printer

Fujitsu adds new products

Fujitsu Canada Inc. recently announced a plethora of new products in the printer and mass storage fields, indicating that the company intends to compete strongly in the computer market.



The three new PrintPartner lasers are aimed at high-volume stand-alone or networked workgroup markets. Announced were the models 10W, 11W, and 14ADV. All

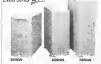
three models are aimed to meet monthly duty cycles of up to 35,000 pages per month, and include a Fujitsu flavor of Lexmark's popular MarkVision printer administration software. The printers offer 600 dpi resolution and "T300 dpi-class" output at prices ranging from \$895 to \$1,495, depending on model and configuration.

Fujitsu has also continued to develop its Stylitic handheld PC line, including the Stylitic 1000 product, and has released a 600MB Magneto-Optical (MO) recorder for the PC, as well as a randomized 20MB MO drive for notebook computers.

For more information contact Fujitsu at <http://www.fujitsu.com/canada/products/products.html> or 1-800-661-9756.

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Hewlett-Packard enters CE palmtop PC market

Hewlett-Packard (Canada) Ltd., one of the world's major makers of handheld computers and electronic organizers, announced on May 15 that the company is launching two new handheld computers based on the Microsoft Windows CE operating system.

The HP 900LX and 330LX models feature a four-pageable 640 by 240 screen, and have suggested prices of \$699 and \$997, respectively.

According to Paul Patterson, the Canadian product manager for HP handheld computing products, "HP has delivered the best, most feature-rich palmtop PC in the handheld market. Demand from the reseller channel is high, due to strong industry feedback and tremendous praise from our corporate customers. HP is focused on making palmtop PCs easy for enterprise managers to integrate and deploy to their mobile workforces." Among the exclusive advantages claimed by HP for its new palmtop PCs are a dedicated slot for Compaq Flash memory cards, which leaves the PC Card slot free for a modem, energy-efficient backlit screen, larger, better laid out keyboard, HP printer driver integrated Pocket Internet Explorer in ROM, and better screen fonts for a more readable display.

In a special preview to *Canadian Computer Wholesaler*, Patterson also commented that HP's reputation as a solution provider to a large number of corporations and government agencies has been a valuable competitive advantage, and has helped validate the CE platform as an option to many potential clients.

For more information, visit <http://www.hp.com> or call: 1-800-963-3607.



Mark George now leads Bay Networks Canada

Bay Networks Inc. has appointed Mark George as the president of Bay Networks Canada.

According to the company, he will spearhead a focus on adaptive networking.

George brings more than 13 years of management and sales experience in the technology industry as his new position. He was most recently director of the network product division for Digital Equipment Corp.

Sharon Spring joins Keating



Keating Technology Inc. of Markham, Ont., has appointed Sharon Spring to the position of vice-president, marketing.

Her primary role will be to lead the marketing team in developing and executing brand, consumer and channel marketing plans on behalf of Keating's vendors, says the company.

Spring was most recently vice-president, marketing, for Marvell Canada Inc., and she has 17 years in the industry at the reseller, manufacturer and distributor levels.

Keating is the exclusive representative of Norton-Landolt, Strim Technology, U S Robotics, Personal Communications Division, and Xerox.

Compaq adds product manager

Compaq Canada Inc. has appointed Bryan Why as product manager, consumer products.

In the position, Why will be responsible for all aspects of Compaq's consumer personal computers, including developing product launches, pricing and promotion.

Why joined Compaq after seven years at Apple Canada Inc. where he served as product manager responsible for Apple's Macintosh Performa consumer PCs.

Stratus makes appointments

Stratus Computer Corp. in Canada has appointed Karl Kotze director, sales. He is responsible for marketing solutions to the financial, government and commercial sector.

Myron Deposito has been named country administrator, Canada, with responsibilities

including sales administration and finance.

Stratus delivers a range of "continuously available" computer platforms.

Simware adds management

Ottawa's Simware Inc. has appointed Richard Crutshaw as vice-president of North American operations for information access projects.

Crutshaw will manage the sales thrust for Simware's server-based Salvo Internet/intranet product and the company's ASB client-based communications system. He joins Simware from executive positions at Agrium Insurance Corp. and Oracle Corp. of Canada.

David Desgautin joins Simware as director, technical services. He assumes responsibility for the professional services, provides support and education functions in North America.

Sam Morcos is Simware's new director of channels. He comes from the portfolio of Internet development manager for Digital Equipment of Canada Ltd.

And Marshall Seagater was promoted to director and general manager of the network automation business unit.

Simware provides Internet, information access and network automation software intended to reduce the complexity and cost of enterprise systems.

Informix names director



Informix Software (Canada) Inc. has named Tim McInnes director, client services. He is responsible for the delivery and implementation of relational maintenance, consulting and training strategies for the database technology company.

He has held senior management positions with AmeriData, Control Data, Canada Systems Group and Multiple Access, and has more than 25 years experience in technology services. *EE*

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On-line lists of upcoming events are often the first to go live! Visit www.computertaipei.org for more information.

Good Service

The Best Marketing Plan

by Douglas Alder



He was sitting in front of his computer reading a newsgroup off the Internet. One posting read:

"Why, then, in the name of Zeus, can't a computer retailer adopt these principles? Why must we be constantly bombarded with such razzle-dazzle about laser printers, brain-dead sales staff, poor inventory selection and rude 'sales' staff? Please, SCUMMAGE! set up a decent store that's 'fun' to go to?"

Word Of Mouth

Joe was sad, because he knew that the writer was referring to his company. It used to be if a customer was disappointed by a store's product or services, that they would tell twice as many people as they would if they were happy with it. Now, with the Internet, the situation is much worse. An unsatisfied customer can tell literally tens thousands of people within minutes of being disappointed at a company's bad service. Now time someone goes shopping, they do a quick search on Alta Vista or Yahoo, simply typing in a company's name, and they come up with a few dozen letters complaining about what bad service they got. These would-be customers never show up.

The types of complaints Joe's company was blamed for were slow delivery, false advertising, bait-and-switch tactics and poor service. He also knew that his store was not a happy place to work for his staff.

"While I was at the store to pick-up my system, no one wanted to assist me (waited probably 30 minutes), the receptionist was

ignoring everyone standing there, some man-agers-type was screaming at some employees, a dozen people returned their systems because of missing/damaged parts and when I had my system brought out they didn't have all the software drivers and manuals for my components."

Time For A Change

Then Joe read a business book that had a big impact the way he did business. The book was called "Marketing Without Advertising."

This book suggested that the best marketing plan encourages customer loyalty and personal recommendations over every traditional advertising approaches. It contained a number of practical steps to building a strong small business without spending huge amounts on advertising.

According to the book, there are no shortcuts to achieving this. A marketing strategy built on personal referral is built on trust, and trusting others is you would like to be treated. It is based on the principle of "don't do to others what you would not want done to you." This part really hit home with Joe, because his return policy was based on the law of non-action — "an eye for an eye." The main thing the book suggested was that if a business is going to go to all the trouble and expense of getting customers to call or visit, they might as well treat customers well when they get there — so they will keep coming back.

So Joe set about implementing many of the changes advocated in the book. He changed his advertising to include only products he knew he could supply at the prices promised. He recruited his sales staff to deal with customers honestly and to be up front about the limitations of the technology that they were selling. Joe was soon pleased to see that his store was starting to elicit enthusiastic responses from customers instead of gripes. The word on the Internet about his

store changed to:

"It was the place, the people, the friendliness and the general fun attitude that this store provided. We were genuinely smiled at and welcomed when we came in. Cakes were free, as were the jellybeans. Customer history is stored on a database and quickly retrieved. Computers are treated like members of an extended family and machine-owners are treated like aging relatives with big words."

Advertising does work, it just has to be the right kind in the right place. In the end, the authors of Joe's favorite book don't really suggest that businesses abandon all their advertising. They acknowledge that certain kinds of advertising can be very cost effective. What they define as lousy-type advertising does work, such as the Yellow Pages, business directory listings, and notification-type ads placed in the places where shoppers expect to find them, such as *The Computer Paper*. The book actually makes specific exceptions to computer publications. Discussing types of places that they do endorse advertising in, they state "Similarly, in the computer software business, a great deal of software is sold at discount prices by companies that regularly advertise their wares in computer magazines. The ads feature, in very small print, long lists of available software."

Ask yourself, are you like Joe? Would you like to be treated like the way your customers are being treated? If the answer is no, then it might be time to make some changes around your business.

Marketing Without Advertising by Michael Phillips & Sally Radberry is available from Nolo Press ISBN 0-81337-019-8. Call 1-800-726-3335 <http://www.nolo.com>. Price US\$19.95.

Douglas Alder is Publisher of Canadian Computer Wholesaler. He can be reached at publisher@jagp.ca



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